4.2.1.8 Operational Precautions

4.2.1.8.1 G&N System Turn-On. The following conditions shall be met prior to IMU power application.

4.2.1.8.1.1 Initial Turn-On. If the IMU has just been installed in the test fixture, LGC power shall be applied with the IMU Standby power for a minimum of two hours.

4.2.1.8.1.2 General Turn-On. If the IMU Operate power has been applied to the G&N system through normal JDC procedures specified in Figure 2 and the IMU gimbals have been positioned such that the PIPA and IRIG output axes are horizontal ±1° not in excess of twelve days, or the IMU gimbals have been positioned such that the output axes are horizontal ±5° not in excess of five days, and the IMU gimbals have not been moved since parking, LGC power shall be applied with the IMU Standby power for a minimum of fifteen minutes. If the IMU gimbals have not been parked, an equivalent minute for minute waiting period with LGC and IMU Standby power applied shall be endured. If the waiting period is in excess of two hours, a two hour waiting period shall suffice. If the GSE temperature controller has been allowed to maintain an IRIG temperature greater than 135°F a minimum waiting period of thirty minutes shall be endured.

4.2.1.8.2 G&N System Turn-Off. The following conditions shall be strictly adhered to prior to removal of G&N System power at the interface.

4.2.1.8.2.1 Deleted.

4.2.1.8.2.2 Power Turn-Off Sequence. Upon G&N System power removal, the IMU Operate power shall be turned off first. The IMU Standby and LGC power may then be turned off in that order.

4.2.1.8.3 Suspension Power. The LGC power (3200 cps suspension power) shall not be off while torquing the inertial components is taking place. Noncompliance shall result in degaussing and recalibration of the components.

4.2.1.8.4 Gimbal Lock. A Verb 36 shall not be entered into the DSKY if the GIMBAL LOCK lamp is lighted.

4.2.1.8.5 Inertial Component Performance Tests. The IMU Operate power must be applied for a minimum of one hour prior to performing JDC 12624.

4.2.1.9 Test Equipment Required. The test equipment utilized in whole or part as required by the respective JDC for the test being conducted shall be in accordance with Drawing 1900030.

4.2.1.10 Jigs and Fixtures. Test probes shall not be used to make direct electrical connections to connectors of the Apollo Guidance Equipment. Jigs made up of mating connectors shall be used.

4.2.1.11 Rotary Table Alignment Requirements. The Rotary Table Tilt axis shall be aligned parallel to true east within ±1 minute, and at 0° tilt the rotary axis shall be aligned within ±2 seconds of vertical.

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MASTER END ITEM DETAIL SPECIFICATION

PART II

PRODUCT CONFIGURATION AND ACCEPTANCE TEST REQUIREMENTS

PGNCS SPACECRAFT EQUIPMENT

LEM

DRAWING NO. 6015000

MEI NO. 6015000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				DE	NASA
2/4/71	M	38336	6 FE/AC	EA	MDH

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			MIT/IL			

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ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

Declassified per para. II. B. 6. e(3) of SC6-11 REV 1, dated 1 Jan 1966

Signed RDGeiger Dept. 32-17 Date 6-3-66

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5/11/66	C	28710	1, 2, 4, 6, 7 9 10, 11, 16-20, 24	MGM	ACM

This specification consists of page 1 to 25 inclusive.

APPROVALS	**NASA/MSC**	Robert Crisp	**MIT/IL** 10/26/65	**ACSP**

ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

1 INTRODUCTION

1-1 SCOPE. This specification describes the requirements and procedures for the assembly test of the LEM Inertial Subsystem hereafter called the Assembly. The Assembly will be used on the LEM Guidance and Navigation Equipment and shall consist of the following items:

6007001	LEM IMU and Pulse Torquing Electronics (1)
6007200	Power and Servo Assembly (1)
2007222	Coupling Data Unit (1)

1-2 APPLICABLE DOCUMENTS

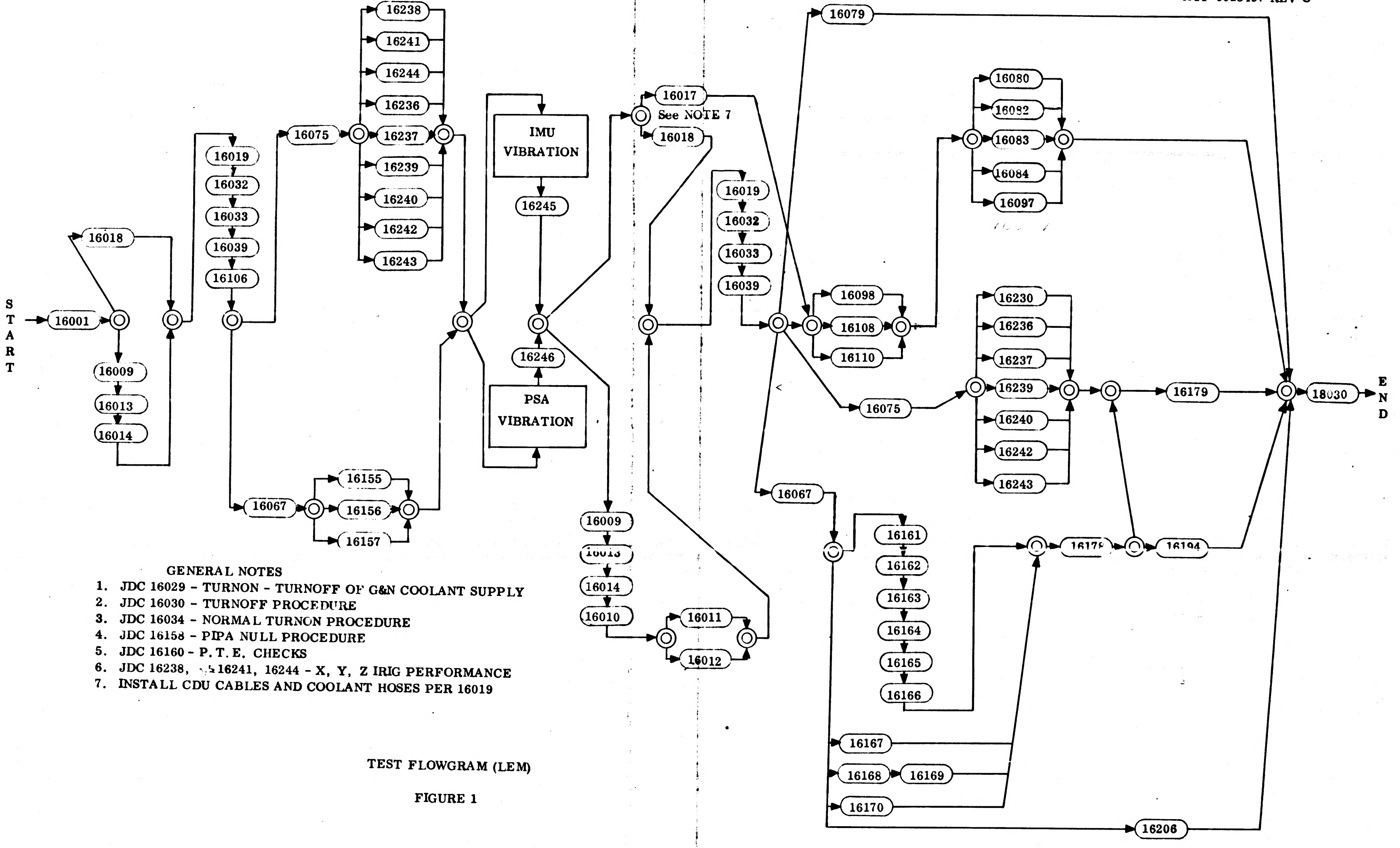
Apollo G & N Drawings

6017200	Power and Servo Assembly
6007222	Coupling Data Unit
6007001	LEM IMU and Pulse Torquing Electronics Assembly

1-3 SUBORDINATE DOCUMENTS. The following documents form a part of this specification.

ND 1002273	PSA Workmanship Vibration Specification
ND 1002275	IMU/PTA Workmanship Vibration Specification

2 ASSEMBLY REQUIREMENTS. Special assembly requirements shall be noted in the JDC's of Section 4-3.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GENERAL NOTES

1. JDC 16029 - TURNON - TURNOFF OF G&N COOLANT SUPPLY
2. JDC 16030 - TURNOFF PROCEDURE
3. JDC 16034 - NORMAL TURNON PROCEDURE
4. JDC 16158 - PIPA NULL PROCEDURE
5. JDC 16160 - P.T.E. CHECKS
6. JDC 16238, 16241, 16244 - X, Y, Z IRIG PERFORMANCE
7. INSTALL CDU CABLES AND COOLANT HOSES PER 16019

TEST FLOWGRAM (LEM)

FIGURE 1

3-3 TEST CONDITIONS. The assembly shall be subject to tests under the following test and environmental conditions.

3-3.1 TEST ENVIRONMENTS.

3-3.1.1 Workmanship Vibration Tests.

a. Ambient Temperature 25° ±10°C

b. Relative Humidity 90% max

c. Barometric Pressure 28 to 32 inches of Hg

3-3.1.2 IMU Visual/Mechanical Inspection. Same conditions as provided in Section 3-3 of IMU PS2018601.

3-3.1.3 All Other LEM ISS JDC's. Room temperature shall be 75° (±4°) F; Relative humidity shall be 50% maximum.

3-3.2 TEST POWER. The following electrical inputs are required to test the assembly:

DC Supply Voltage

(1) Standby: Variable 24.0 to 33.0 vdc

(2) Operate: Variable 24.0 to 33.0 vdc

Pk-Pk Noise: Less than 1 volt

Measured at Input connector when ISS is in Test Configuration and all components operating.

3-3.3 TEST INPUT SIGNALS. The input signals shall be as specified in Table III.

3-3.4 COOLANT REQUIREMENTS. The IMU shall be provided with water-glycol coolant at a temperature of 45 (±3)°F and flow rate of 33 (±3) lbs. per hour. In addition, the PSA and CDU, Coldplates will be provided with coolant sufficient to maintain the header temperature at 72° (±2°)F. The PTA Coldplate coolant hoses shall be connected in series with the IMU outlet.

3-3.5 SUSPENSION REQUIREMENTS. The inertial components shall not be torqued until the 28 volt 3200 cps suspension power has been on for at least two hours. Before attempting precise measurements of inertial performance, the ISS shall have been in the OPERATE mode for at least 1 hour.

3-3.6 ROTARY TABLE STABILITY REQUIREMENTS. The azimuth stability of the rotary table shall be within 1 arc minute. The tilt stability shall be within ±2-1/2 arc seconds of calibrated value, over a 24-hour period.

3-3.7 Special Test Conditions

3-3.7.1 Previb and Postvib functional tests may be performed with the PSA and PTA covers removed.

3-3.7.2 The silicone grease shall be applied to the PSA and PTA modules after the completion of the visual mechanical inspection of the modules.

TABLE III - INPUT SIGNALS (From Computer Simulator) (CONT)

COMPUTER OUTPUT	REPETITION RATE (PPS)	PULSE WIDTH (μsec.)	AMPLITUDE (volts peak)
ISS CDU +Z (MG)	3200	3	7 (±3)
ISS CDU -Z (MG)	3200	3	
Power Supply Sync	12.8 KC	3	
Power Supply Sync	25.6 KC	3	
+ RR Shaft	3200	3	
- RR Shaft	3200	3	
+ RR Trunnion	3200	3	
- RR Trunnion	3200	3	
Cage Command	-	-	28 V IMU
Display Inertial Data	0 volts DC through 2K resistor		
Discretes to three ISS CDU's			
Error Counter Enable	0 volts DC through 2K resistor		
Coarse Align Enable	0 volts DC through 2K resistor		
CDU - zero	0 volts DC through 2K resistor		
Discretes to Two Rendezvous Radar CDU's			
Error Counter Enable	0 volts DC through 2K resistor		
CDU - zero	0 volts DC through 2K resistor		

3-4.1.1 800 CPS 1% Supply. The output voltage shall be 28 (±0.42) v rms. The supply shall run in synchronism with the sync pulses supplied by the LGC [800 cps (±0.5 ppm).] The free running frequency of the supply shall be 750 (±40) cps.

3-4.1.2 800 CPS IRIG Wheel Supply. The A phase supply voltage shall be 28.0 (±1.4) v rms (5.0%) and its phase shall be 270° (±10°) with respect to the 800 cps 1% supply. The B phase supply voltage shall be 28.0 (±2.1) v rms (7.5%) and its phase shall be 180° (±10°) with respect to the 800 cps 1% supply. The phase difference between the phase A and B supply voltages (ØB - ØA) shall be -90±10°.

3-4.1.3 3200 CPS 1% Supply. The voltage of this supply shall be 28.5 (±0.42) v rms as measured at the feedback line external to the IMU. This supply shall run in synchronization with the sync pulses from the LGC (3200 cps ±0.5 ppm). The free running (without sync pulses) frequency of this supply shall be less than 3160 cps. The phase relationship of the feedback voltage with respect to the LGC sync pulses shall be 0° (±10°).

3-4.1.4 Minus 28 VDC Power Supply. The output voltage shall be -27.5 (±6) vdc. The noise voltage shall not exceed 3.0 volts peak-to-peak.

3-4.1.5 4 Volt DC CDU Power Supply. The output voltage shall be 4.0 (±0.2) vdc when measured at the load. The noise voltage shall not exceed 200 mv peak-to-peak.

3-4.1.6 Pulse Torque Power Supply. The power supply shall provide six outputs which meet the following requirements:

OUTPUT	OUTPUT VOLTAGE	NOISE
120 VDC (1)	120 (±6) vdc	0.5 V P-P max
28 VDC (3)	28 (±1.4) vdc	0.2 V P-P max
+20 VDC (1)	20 (±1.2) vdc	
-20 VDC (1)	-20 (±2.0) vdc	

The noise voltage shall be measured at the power supply load.

3-4.2 FAILURE INDICATIONS. The following failure indications shall be present at the LGC interface.

3-4.2.1 IMU Failure Indications. The IMU Failure indication shall be generated at the LGC interface under any one of the following conditions, and shall consist of a relay closure on 28 volts supplied by the ISS to the LGC.

a. Any gimbal servo error signal is between 5.5 and 7.5 volts rms. When the error signal is greater than 7.5 volts, the failure indication shall always be present. When the error signal is less than 5.5 volts, the failure indication shall never be present.

3-4.2.2 CDU Failure Indications. The CDU Failure indication shall appear at the LGC interface approximately 3 seconds after any of the following conditions exist on any IMU axis. The discrete shall be a 28 VDC signal (into a 20K load). The fail indication shall disappear within 2 seconds after the condition is removed.

a. Fine Error: With the CDU zeroed, the failure indication shall not be present for a gimbal angle of 0° ± 15', and shall be present for a gimbal angle of 1° ± 15'.

b. Coarse Error: With the CDU zeroed, the failure indication shall not be present for a gimbal angle of 22.5° +0', -15', and shall be present for a gimbal angle of 33.75° ± 15'.

c. Cosine $(\theta - \psi)$: With the CDU zeroed, and the gimbal angle set to 0 ± 0.5°, the failure indication shall not be present. With the 16X IMU resolver outputs removed and the 16X sin and cosine CDU inputs shorted to ground, the failure indication shall be present.

d. Limit Cycle: With the CDU zeroed, and the CDU resolver inputs excited such that the CDU Read Counter Up Line oscillates at 200 cps rate a fail indication shall occur.

e. 14 VDC Fail: With the CDU zeroed, and a 2K load to CDU 0 VDC connected to the CDU ISS +14V T.P. A fail indication shall occur.

3-4.3 TEMPERATURE CONTROL REQUIREMENTS. The temperature of the Inertial Components shall be monitored.

The IRIG Temperature shall be 135 (±1)°F after 15 minutes in Operate.

The PIP Temperature shall be 130 (±1)°F.

3-4.4 STABILIZATION AND GIMBAL ANGLE CONTROL LOOPS. In order to verify proper operation of the stabilization and gimbal angle control loops, the following characteristics shall be demonstrated.

3-4.6.3 Saturation. The CDU command interface signal shall exhibit saturation when a minimum of 384 plus or minus $\Delta\theta_C$ pulses are applied to the error angle counter. The saturated voltage shall not exceed 5.1 volts.

3-4.7 COARSE ALIGN LOOP.

3-4.7.1 Coarse Align Steady State. With COARSE ALIGN and ENABLE ERROR COUNTER signals present at the LGC interface, the following steady state conditions shall be met at Gimbal Angles of 0 (±2)°, 090 (±2)°, 180 (±2)°, and 270 (±2)° on all three axes:

a. The coarse align error, as measured at the DAC AC output, in the applicable CDU shall be less than 260 millivolts in phase as measured on the PAVM.

b. The torque motor voltages shall meet the conditions specified in Paragraph 3-4.4.3b above.

3-4.7.2 Coarse Align Transient and Slewing Performance. With the Coarse Align and the Error Angle Counter enable signals present at the LGC interface, the following requirements shall be met:

a. Slew Test. When a total of 4096 pulses is applied on either the plus or minus CDU command line, the gimbal angles shall change by plus or minus 180 (±1.5)° respectively. These pulses shall be applied in 64 bursts of 64 pulses each at a rate of 1 burst each 240 milliseconds.

b. Transient Test. For a burst of 256 pulses, the gimbal angle shall reach final value (first crossing) within 0.64 second after the last LGC $\Delta\theta$ command pulse. The gimbal angle as indicated in a recording of the 1X sine signal shall exhibit no more than one overshoot in excess of 0.55°.

c. Test Rate Limiting. The maximum gimbal rate during Coarse Align shall not exceed 0.24° per second. This will be insured by noting that the time to first final value crossing in b above shall be greater than 0.35 sec.

3-4.8 LEM 800 CPS EXCITATION INTERFACE. The 800 CPS Excitation Interface for the Rendezvous Radar resolvers, Gimbal Angle Sequence Transformation Assembly, attitude error demodulators, hand controllers, throttle controllers and synchronization shall have the following characteristics when measured at the interface connector. The amplitude shall be 28 volts ±2% from no load to full load conditions. The frequency shall be 800 cps ±0.5% when sync pulses are applied by the LGC. The free running frequency shall be 745 (±45) cps.

3-4.9 INERTIAL PERFORMANCE.

3-4.9.1 PIPA Loop Adjustment. The following adjustments shall be made at dc power source input (simulated LEM ISS Operate Bus) of 28.0 ± 0.25 volts dc prior to workmanship vibration:

a. The PIPA lg Bias shall be adjusted to +0.05 cm/sec^2 or less.

b. The PIPA SCALE FACTOR shall be adjusted to 1.00 cm/sec/pulse ± 100 parts per million.

3-4.9.2 PIPA Loop Performance.

3-4.9.2.1 Scale Factor and Bias. The following characteristics shall be demonstrated at dc power source inputs (simulated LEM ISS Operate Bus) of 28.0 ± 0.25 vdc, 24.5 +0 -0.50 volts dc and 32.5 +0.5 -0.0 volts dc:

a. Following adjustment of the PIPA BIAS, no subsequent measurement of null bias nor of 1G BIAS shall exceed ±0.50 cm/sec^2. The spread between successive null bias and 1G bias measurements shall not exceed 0.3 cm/sec^2.

b. Following adjustment of the PIPA SCALE FACTOR, no subsequent measured value shall deviate from 1.00 cm/sec/pulse by more than ±400 parts per million.

3-4.9.2.2 Other Characteristics. The following characteristics shall be demonstrated for a dc power source input (LEM ISS operate bus) of 28.0 (±0.25) vdc.

a. Phase and Quadrature. With each individual PIP Input Axis placed in the local horizontal in succession, the quadrature voltage of the A.C. Differential Amplifier output shall not exceed 350 mv rms and the phase angle with respect to the 3200 cps reference excitation shall be -45° ± 10°.

b. Pulse Characteristics. The "p" and "n" pulses of each PIPA shall meet the following specifications at the LGC interfaces:

Polarity:	Positive
Amplitude:	7± 3 volts
Duration:	3.5 to 7.0 microsecs. at 4 volts amplitude
Noise:	Less than 0.5 volt P-P.

3-4.9.3 IRIG Scale Factor Measurement. The IRIG Scale Factor shall be measured at the following dc power source inputs (simulated LEM ISS Operate Bus) 28.0 ± 0.25 vdc, 24.5 +0 -0.50 vdc, and 32.5 +0.50 -0.0 vdc. No measured value shall deviate from $2\pi/2^{21}$ radians/pulse by more than 1000 parts per million, nor shall the peak to peak spread of all the ISS Measurements exceed 1000 parts per million.

3-4.9.4 IRIG Performance. The IRIG performance shall be measured as described in the following paragraphs:

3-4.9.4.1 Stability with Respect to Retest Values. The following requirements shall be met at a dc power source input of (Simulated LEM/ISS Operate Bus) of 28.0 ± 0.25 vdc prior to workmanship vibration.

a. BIAS DRIFT (BD) shall not deviate by more than ±5 Meru from the retest value.

b. Drift due to specific force along the input axis, (ADIA), shall not deviate by more than ±10 Meru/g from the retest value.

c. Drift due to specific force along the spin reference axis (ADSRA), shall not deviate by more than ±5 Meru/g from the retest value.

3-4.9.4.2 Cumulative IRIG Stability during ISS Testing. In addition to the Pre-vibration Measurement specified in 3-4.9. BD, ADIA, and ADSRA shall be measured following workmanship vibration with a dc power source input (simulated LEM ISS

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Operate Bus) of 28.0 ±0.25 vdc. This measurement shall be the REFERENCE VALUE for subsequent G&N Testing, Field Testing, and Post Installation Testing. The peak to peak spread of all ISS Measurements, both pre-vibration and post-vibration, of the IRIG performance values shall not exceed the following:

BD	3 Meru Spread
ADIA	12 Meru/g Spread
ADSRA	8 Meru/g Spread

3-4.10 IMU ALIGNMENTS.

3-4.10.1 Outer Gimbal Axis to Navbase Alignment. The non-parallelism of the outer gimbal axis with respect to the X navbase axis, by rotation about Y, shall not exceed 30 seconds of arc. The non- parallelism of the outer gimbal axis with respect to the X navbase axis, by rotation about Z, shall not exceed 45 seconds of arc.

3-4.10.2 Intergimbal Orthogonality. The alignment of the Outer Gimbal Axis to the Middle Gimbal Axis (E_{MGA}) and the Middle Gimbal Axis to the Inner Gimbal Axis (E_{IGA}) shall be held to within 0.3 mr.

3-4.10.3 Adjustment of 16X Resolver Nulls. The 16X resolver nulls on the Middle and Outer Gimbal Axis shall be adjusted to within 20 seconds of arc of zero. The 16X resolver null on the Inner Gimbal Axis shall be adjusted to within 20 seconds of E_{MGA}.

3-4.10.4 PIP Alignments. The misalignment of each PIP input axis with respect to its associated stable member axis shall not exceed ±60 seconds of arc. This misalignment shall be measured to an accuracy of 8 seconds of arc or less.

3-4.10.5 IRIG Misalignments. Misalignment of the IRIG fixed triad, with respect to the Stable Member fixed triad, shall not exceed 1 milliradian about any axis. The misalignment rotation shall be measured to within 1 min.

3-4.10.6 Total Attitude Signal to LEM FDAI. In order to verify proper interface signals for the FDAI, the following characteristics shall be demonstrated at the cardinal gimbal angles.

a. Maximum Coupling Output. With the gimbal positioned to the cardinal angles ±1 arc minute, the maximum coupling output shall be 26 ±2.6 v rms as read on the DVM.

b. Minimum Coupling Output. With the gimbals positioned to the cardinal angles ± 1 arc minute, the minimum coupling output shall have the following characteristics as read on the PAVM.

1. Less than 150 mv. total (e_T)

2. $e_T - e_f$ less than 33 mv.
e_T Total Null Voltage
e_f 800 cps component

4 TEST PROCEDURES

4-1 GENERAL. The examinations and tests contained in this section are intended for execution on the assembly.

4-2 TEST FAILURE. The failure of the assembly to pass any examination or test of this section will automatically classify the unit as nonconforming. When nonconforming units are corrected the unit shall be reinspected. If the unit cannot be corrected further testing shall be conducted only when so directed by the cognizant agency.

4-3 JOB DESCRIPTION CARDS. The Job Description Cards (JDC) listed in Table V and JDC's 18000 - 18046 from Checkout, Maintenance and Repair Manual form a part of this procedure.

4-4 DATA SHEETS. The instructions contained on the listed data sheet shall be utilized in each operation, calibration, alignment, or in process test prescribed by the JDC identified in Table V.

5 NOTES. None

ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

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FOR

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5/11/66	C	28710	1, 2, 4, 6, 7 9 10, 11, 16-20, 24 RDG/AC	MGM	ACM
6/8/66	D	29533	5, 6, 13-16, 21 RDG/AC	MGM	--

This specification consists of page 1 **to** 25 **inclusive.**

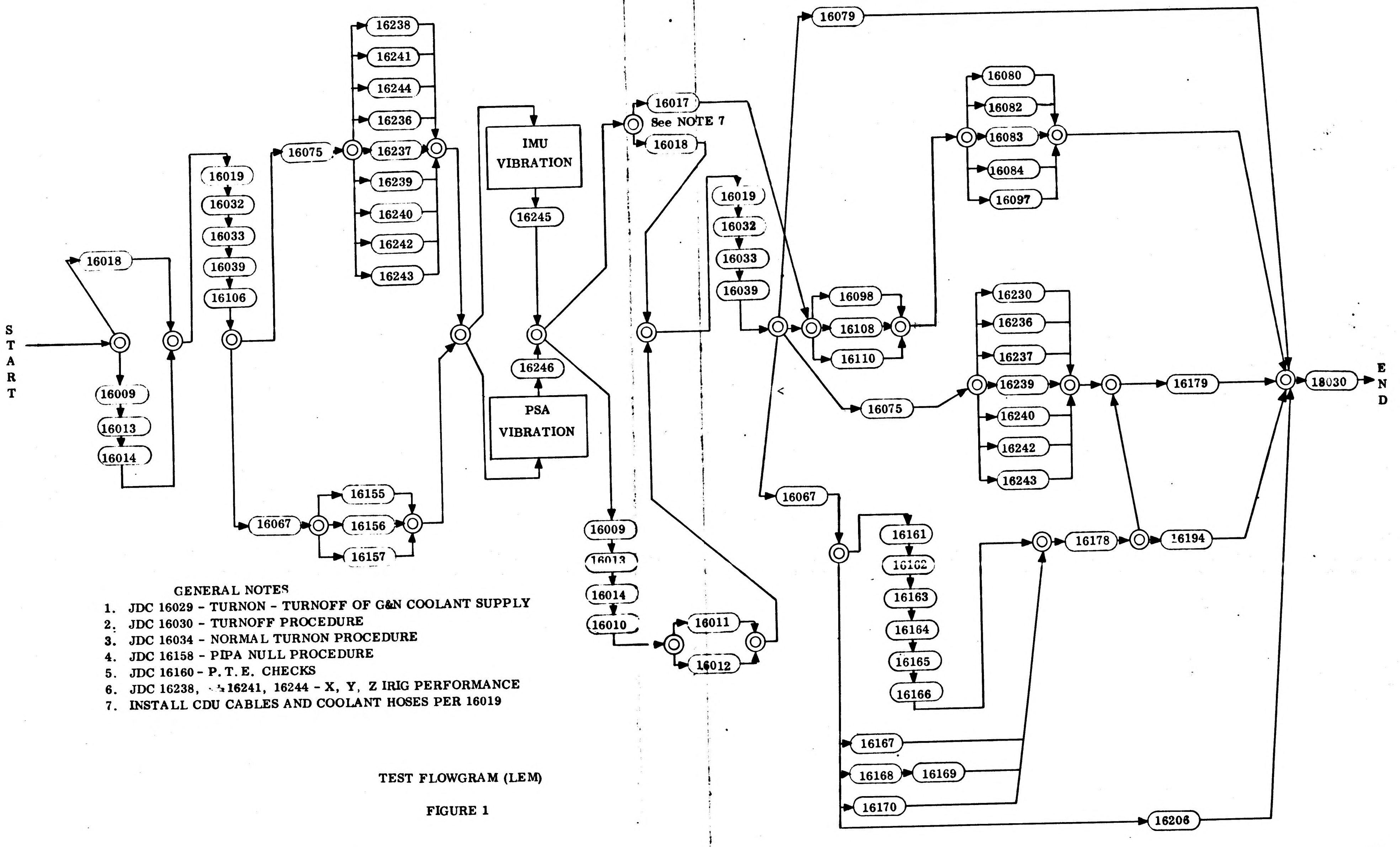
APPROVALS	A. C. METZGER **NASA/MSC**	Robert Crisp **MIT/IL**	**ACSP**

10/26/65

TABLE II - APPLIED LOADS (CONT)

INTERFACE	SIGNAL DESCRIPTION	VALUE (ohms)
LEM Radar	RR Shaft AC DAC	20K (±5%)
	RR Trunnion [illegible] DAC	20K (±5%)
	RR Shaft DC DAC	50K or 100K
	RR Trunnion DC DAC	50K or 100K

3-2.2 CERTIFICATION. All test equipment shall be certified according to normal certification procedures except the rotary table. The rotary table shall be calibrated at regular 3-month intervals as specified in ND 1021034 (Associated Test Equipment Manual - JDC 19728 and certified in azimuth to ±30 seconds of arc at regular 18-month intervals. The level adjustment shall be accomplished as specified in Section 4-3 and Figure 1.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GENERAL NOTES

1. JDC 16029 - TURNON - TURNOFF OF G&N COOLANT SUPPLY
2. JDC 16030 - TURNOFF PROCEDURE
3. JDC 16034 - NORMAL TURNON PROCEDURE
4. JDC 16158 - PIPA NULL PROCEDURE
5. JDC 16160 - P. T. E. CHECKS
6. JDC 16238, 16241, 16244 - X, Y, Z IRIG PERFORMANCE
7. INSTALL CDU CABLES AND COOLANT HOSES PER 16019

TEST FLOWGRAM (LEM)

FIGURE 1

3-4.4.5 Bandwidth Requirements. With a variable frequency constant voltage as shown below applied to the dc amplifier test input, the loop bandwidth, defined as 6 db (0.5) down from relative zero, as measured on a strip recorder shall be between 50 and 150 cps. Relative zero is defined as the gimbal error signal magnitude at 0.1 cps. At no frequency shall the gimbal error signal rise more than 12 db (x4) above relative zero magnitude.

Inner Gimbal	2.0 (±0.2) P-P
Middle	1.0 (±0.1) P-P
Outer	1.0 (±0.1) P-P

3-4.5 CDU ANALOG - DIGITAL FUNCTIONING.

3-4.5.1 Gimbal Angles. The ability of the CDU to repeat the gimbal angles shall be demonstrated. The following conditions shall be present at the beginning of the test:

a. ISS in INERTIAL Mode.

b. Each gimbal axis is positioned to null out gimbal drift.

c. The 16x sine windings are nulled.

d. The table shall be rotated (rotary axis for IG and MG; tilt axis for OG) until the number of $\Delta\theta_G$ pulses listed in Table IV occurs.

e. The change in table angle shall be within the values specified. (Table IV lists the change in table angle for positive gimbal rotations. For negative gimbal rotations, subtract 20" from each angle).

3-4.5.2 CDU $\Delta\theta_G$ Pulses. The pulses on the positive and negative interfaces to the LGC and LGS shall have the following characteristics.

Amplitude	6 (±3) V
Pulse Width	2 to 4 μsec. at 3V amplitude
Noise	less than 0.5 VP-P
Polarity	positive

TABLE IV - CDU DYNAMIC REPEATING TEST

PULSES FROM ZERO	IDEAL TABLE DEVIATION FROM REFERENCE POINT			
0	0°			
1	0°	00'	50"	±40"
224	2°	27'	49"	±40"
288	3°	10'	01"	±40"
480	5°	16'	34"	±40"
512	5°	37'	40"	±40"
544	5°	58'	46"	±40"
736	8°	05'	19"	±40"
800	8°	47'	31"	±40"
1024	11°	15'	10"	±40"
1248	13°	42'	49"	±40"
1312	14°	25'	01"	±40"
1504	16°	31'	34"	±40"
1536	16°	52'	40"	±40"
1568	17°	13'	46"	±40"
1760	19°	20'	19"	±40"
1824	20°	02'	31"	±40"
2048	22°	30'	10"	±40"
2272	24°	57'	49"	±40"
4384	48°	10'	01"	±40"
6880	75°	35'	19"	±40"
8192	90°	00'	10"	±40"
8992	98°	47'	31"	±40"
11488	126°	12'	49"	±40"
13600	149°	25'	01"	±40"
16096	176°	50'	19"	±40"
16384	180°	00'	10"	±40"
18208	200°	02'	31"	±40"
18656	204°	57'	49"	±40"
20768	228°	10'	01"	±40"

TABLE IV (Continued)

PULSES FROM ZERO	IDEAL TABLE DEVIATION FROM REFERENCE POINT			
23264	255°	35'	19"	±40"
24576	270°	00'	10"	±40"
25376	278°	47'	31"	±40"
27872	306°	12'	49"	±40"
29984	329°	25'	01"	±40"
32480	356°	50'	19"	±40"
32768	360°	00'	10"	±40"

3-4.5.3 Ambiguity Circuit Test. With gimbal angles preset to 225°, 00' 00" and the ISS in the Inertial mode, CDU Zero shall be commanded, executed and released. The CDU shall generate $\Delta\theta_G$ pulses equal to the preset gimbal angle after CDU Zero is released (12,288 ±2).

3-4.5.4 ISS CDU INHIBIT. While in the ISS CDU INHIBIT (READ INHIBIT) mode, the gimbal shall be moved by means of the gimbal positioner ±1°. No $\Delta\theta_G$ pulses shall be generated.

3-4.6 CDU D/A FUNCTIONING. With the Enable Error Counter signal present at the AGC interface, the conditions in paragraphs 3-4.6.1 through 3-4.6.3 shall be met at each of the five CDU 800 CPS Command interfaces with the CSM. In addition, the conditions in paragraphs 3-4.6.4 through 3-4.6.6 shall be met at each of the two CDU DC Command interfaces with the CSM.

3-4.6.1 CDU 800 CPS Command Null. The CDU 800 CPS Command interface shall have an in phase null of 10 mv maximum and a maximum of 10 mv quadrature as measured on a PAVM. The noise shall be less than 50 mv peak-to-peak.

3-4.6.2 800 CPS Scale Factor. Each pulse applied to the error angle counter will cause a change of 13 (±1.3) mv. The error signal shall be in phase with the CDU command reference when 1, 2, 4, 8, 16, 32, 64, 128, 256 and 384 plus pulses are applied. The error signal shall be out of phase when these negative pulses are applied from null.

3-4.6.3 800 CPS Saturation. The CDU 800 CPS command interface signal shall exhibit saturation when a minimum of 384 plus or minus $\Delta\theta_C$ pulses are applied to the error angle counter. The saturated voltage shall not exceed 5.1 volts.

3-4.6.4 CDU DC Command Null. The CDU DC Command interface shall have a null of 10 mv dc maximum. The total null voltage shall be less than 56 mv rms.

3-4.6.5 DC Scale Factor. Each pulse applied to the error angle counter will cause a change in the output as follows:

Pulses from Zero	Scale Factor (mv/pulse)
1	13.2 ±13%
2	13.2 ±8%
4	13.2 ±8%
8, 16, 32, 64, 128, 256, 384	13.2 ±5%

The output shall be positive when plus pulses are applied and negative when minus pulses are applied.

3-4.6.6 DC Saturation. The CDU DC command interface signal shall exhibit saturation when 384 plus or minus $\Delta\theta_c$ pulses are applied to the error angle counter. The saturation voltage shall not exceed 5.4 vdc.

3-4.7 COARSE ALIGN LOOP

3-4.7.1 Coarse Align Steady State. With COARSE ALIGN and ENABLE ERROR COUNTER signals present at the LGC interface, the following steady state conditions shall be met at Gimbal Angles of 0 (±2)°, 090 (±2)°, 180 (±2)°, and 270 (±2)° on all three axes:

a. The coarse align error, as measured at the DAC AC output, in the applicable CDU shall be less than 260 millivolts in phase as measured on the PAVM.

b. The torque motor voltages shall meet the conditions specified in Paragraph 3-4.4.3b above.

3-4.7.2 Coarse Align Transient and Slewing Performance. With the Coarse Align and the Error Angle Counter enable signals present at the LGC interface, the following requirements shall be met:

a. Slew Test. When a total of 4096 pulses is applied on either the plus or minus CDU command line, the gimbal angles shall change by plus or minus 180 (±1.5)° respectively. These pulses shall be applied in 64 bursts of 64 pulses each at a rate of 1 burst each 240 milliseconds.

b. Transient Test. For a burst of 256 pulses, the gimbal angle shall reach final value (first crossing) within 0.64 second after the last LGC $\Delta\theta$ command pulse. The gimbal angle as indicated in a recording of the 1X sine signal shall exhibit no more than one overshoot in excess of 0.55°.

c. Test Rate Limiting. The maximum gimbal rate during Coarse Align shall not exceed 0.24° per second. This will be insured by noting that the time to first final value crossing in b above shall be greater than 0.35 sec.

TABLE V

16009	IMU & PTA/PEA Mounting Fixture Installation on the Rotary Table
16010	Rotary Table Leveling Calibration Test
16011	IMU Mounting Fixture Alignment Test About the X and Y Axis
16012	IMU Mounting Fixture Alignment Test About the Z Axis
16013	Installation of the IMU on the IMU Mounting Fixture
16014	Installation of the Pulse Torquing Assembly to the PTA Holding Fixture Assembly on the Rotary Table
16017	CDU Installation
16018	PSA Installation
16019	Cable and Coolant Hose Connections
16029	G & N Coolant Supply Turn On - Turn Off
16030	Inertial Subsystem Turn Off
16031	Inertial Subsystem Test Initial Conditions
16032	Turn On of Optics Inertial Analyzer (OIA) Power
16033	First Time Turn On of Inertial Subsystem (ISS) Power
16034	Normal ISS and OIA Power Turn On
16039	Power Supply Tests
16067	PIPA Loop Tests (Loop Null Quadrature Test)
16075	Stabilization Loop Tests
16079	IMU Fail Detector Tests
16080	CDU D/A Converter Tests
16082	Inner Gimbal CDU Repeating Accuracy Test
16083	Middle Gimbal CDU Repeating Accuracy Test
16084	Outer Gimbal CDU Repeating Accuracy Test
16097	CDU Fail Detector Tests
16098	CDU Functional Tests
16106	Subsystem Mode Test (Previbration)
16108	Subsystem Mode Tests (Post Vibration)
16110	IMU Cage
16153	IRIG Degaussing
16155	X PIPA Calibration Module Adjustment
16156	Y PIPA Calibration Module Adjustment

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APOLLO G&N Specification
ATP 6015497 REV E
Original Issue Date:
Release Authority: TDRR 17912
Class A Release
TDRR [redacted]
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ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

Declassified per para. II. B. 6. e(3) of SC6-11 REV 1, dated 1 Jan 1966

Signed RDGeiger Dept. 32-17 Date 6-8-66

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
10/26/65	A	23536	All	WK	A. C. METZGER
Ⓜ 1/18/65	B	25379	2, 6-11, 13-19, 21-23	WK	TM
Ⓜ 5/11/66	C	28710	1, 2, 4, 6, 7 9 10, 11, 16-20, 24	MGM	ACM
Ⓜ 6/8/66	D	29533	5, 6, 13-16, 21	MGM	--
Ⓜ 10/13/66	E	31516	12	MGM EA	WLS
11/17/[illegible]	F	31980	12, 1[illegible]	MGM EA	WLS

This specification consists of page 1 to 25 inclusive.

APPROVALS	A. C. METZGER NASA/MSC	Robert Crisp John E Miller MIT/IL 10/26/65	Roy H. Farrar ACSP

3-4.4.1 IMU Caging. Upon closing the IMU cage switch, with all Gimbal Angles initially set at 180 (±5)°, all three gimbal angles shall return to 0 (±1)° within 5 seconds, and the "IMU CAGE" discrete shall be present at the CDU/LGC interface. Care must be taken when performing this test to ensure that the gyro wheels are turned off.

3-4.4.2 Gimbal Friction. Each gimbal shall be slewed by pulse torquing the IRIG's through at least one revolution in each direction. The torque required, as measured by monitoring the torque motor current, shall not exceed 125 ma.

3-4.4.3 Steady State Requirements. With the three stabilization loops in an inertial stabilization mode, the steady state loop error signals shall be as follows:

a. The steady state gimbal error signals shall have less than 1.0 volt quadrature, and less than 60 MV in-phase, as read on the PAVM.

b. The torque motor voltages as measured on the PAVM with function switch on "total" shall be less than 10 volts rms.

3-4.4.4 Step Responses Requirements. A dc step input as shown below shall be applied to each respective torque drive amplifier. After steady state is reached, this voltage shall be removed. The gimbal error signal shall be monitored.

a. The error signal shall have a maximum of 3 oscillation peaks outside a 5% tolerance band of the final value.

b. The time for the error signal to reach and stay within 5% of the initial value shall be less than 100 milliseconds.

c. DC step input:

Inner Gimbal	10.0 (±1.0) VDC
Middle	5.0 (±0.5) VDC
Outer	5.0 (±0.5) VDC

3-4.4.5 Bandwidth Requirements. With a variable frequency constant voltage as shown below applied to the dc amplifier test input, the loop bandwidth, defined as 0 db (1.0) crossing above the resonant peak, as measured on a strip recorder shall be between 35 and 100 cps. Relative zero is defined as the gimbal error signal magnitude at 0.1 cps. At no frequency shall the gimbal error signal rise more than 12 db (x4) above relative zero magnitude.

Inner Gimbal	2.0 (±0.2) P-P
Middle	1.0 (±0.1) P-P
Outer	1.0 (±0.1) P-P

3-4.5 CDU ANALOG - DIGITAL FUNCTIONING.

3-4.5.1 Gimbal Angles. The ability of the CDU to repeat the gimbal angles shall be demonstrated. The following conditions shall be present at the beginning of the test:

a. ISS in INERTIAL Mode.

b. Each gimbal axis is positioned to null out gimbal drift.

c. The 16x sine windings are nulled.

d. The table shall be rotated (rotary axis for IG and MG; tilt axis for OG) until the number of $\Delta\theta_G$ pulses listed in Table IV occurs.

e. The change in table angle shall be within the values specified. (Table IV lists the change in table angle for positive gimbal rotations. For negative gimbal rotations, subtract 20" from each angle).

3-4.5.2 CDU $\Delta\theta_G$ Pulses. The pulses on the positive and negative interfaces to the LGC and LGS shall have the following characteristics.

Amplitude	6 (±3) V
Pulse Width	2 to 4 μsec. at 3V amplitude
Noise	less than 0.5 VP-P
Polarity	positive

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APOLLO G&N Specification
ATP 6015497 REV G
Original Issue Date:
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Class A Release
TDRR [redacted]
CODE IDENT NO. 80230

ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

Declassified per para. II. B. 6. e(3) of SC6-11 REV 1, dated 1 Jan 1966

Signed RDGeiger **Dept. 32-17 Date** 6-8-66

Record of Revisions

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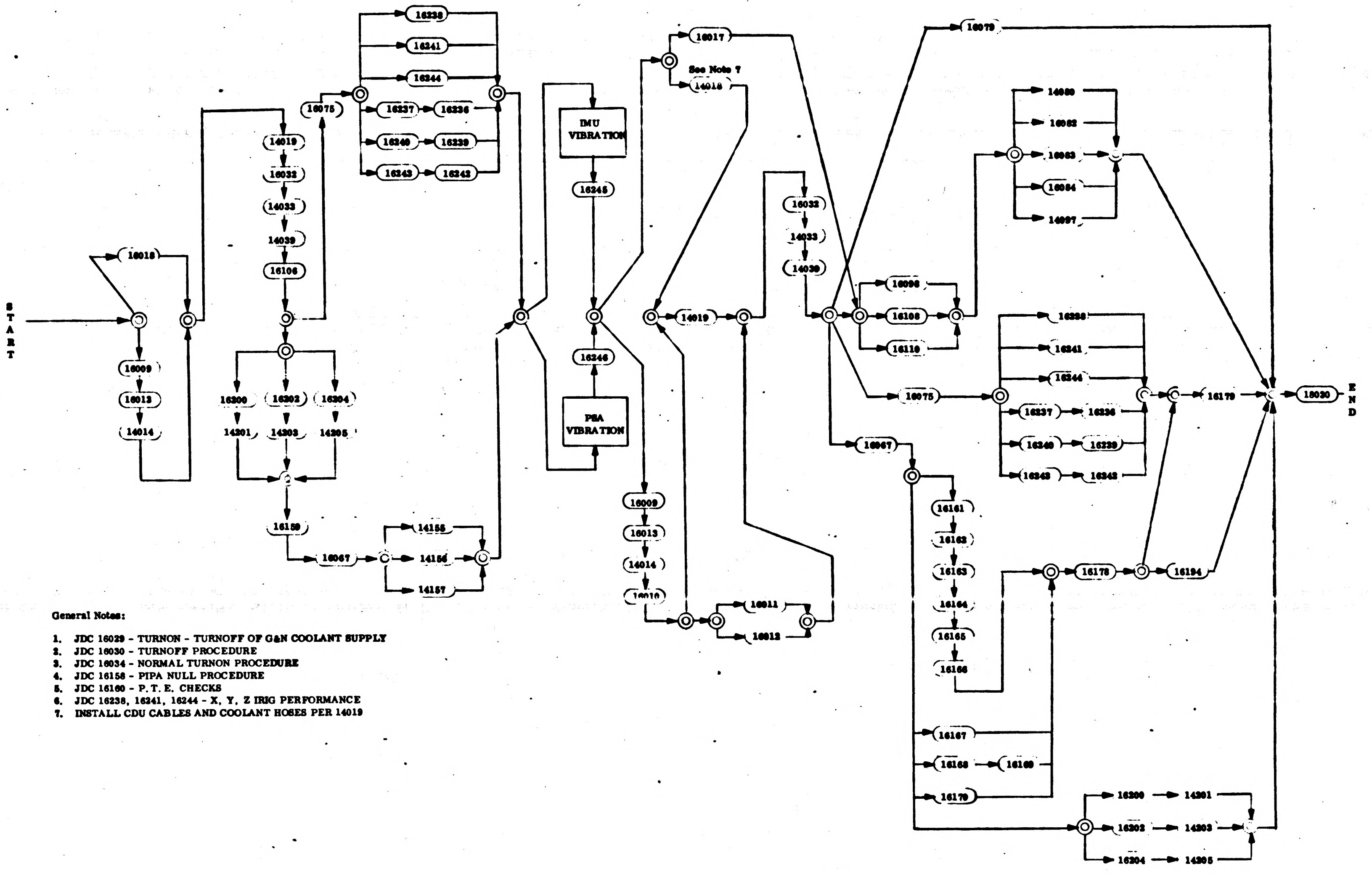
10/26/65	A	23536	All	WK	A. C. METZGER
Ⓜ 1/18/65	B	25379	2, 6-11, 13-19, 21-23	WK	TM
Ⓜ 5/11/66	C	28710	1, 2, 4, 6, 7 9 10, 11, 16-20, 24	MGM	ACM
Ⓜ 6/8/66	D	29533	5, 6, 13-16, 21	MGM	--
Ⓜ 10/13/66	E	31516	12	MGM EA	WLS
Ⓜ 11/17/66	F	31986	12, 13 WS/AC	MGM EA	WLS
3/31/67	G	33374	6, 8, 10, 11, 13, 15 thru 26	MGM EA	WLS
			Was 25 pages; now 26 pages.		

This specification consists of page 1 to 26 inclusive.

APPROVALS	A. C. METZGER **NASA/MSC**	Robert Crisp 10/26/65 **MIT/IL**	**ACSP**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PSA VIBRATION
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General Notes:

1. JDC 16029 - TURNON - TURNOFF OF G&N COOLANT SUPPLY
2. JDC 16030 - TURNOFF PROCEDURE
3. JDC 16034 - NORMAL TURNON PROCEDURE
4. JDC 16158 - PIPA NULL PROCEDURE
5. JDC 16160 - P.T.E. CHECKS
6. JDC 16238, 16241, 16244 - X, Y, Z IRIG PERFORMANCE
7. INSTALL CDU CABLES AND COOLANT HOSES PER 14019

TEST FLOWGRAM (LEM)

FIGURE 1

3-4.1.3 3200 CPS 1% Supply. The voltage of this supply shall be 28.5 (±0.42) v rms as measured at the feedback line external to the IMU. This supply shall run in synchronization with the sync pulses from the LGC (3200 cps ±0.5 ppm). The free running (without sync pulses) frequency of this supply shall be less than 3160 cps. The phase relationship of the feedback voltage with respect to the LGC sync pulses shall be 0° (±10°).

3-4.1.4 Minus 28 VDC Power Supply: The output voltage shall be -27.5 (±6) vdc. The noise voltage shall not exceed 3.0 volts peak-to-peak.

3-4.1.5 4 Volt DC CDU Power Supply. The output voltage shall be 4.0 (±0.2) vdc when measured at the load. The noise voltage shall not exceed 200 mv peak-to-peak.

3-4.1.6 Pulse Torque Power Supply. The power supply shall provide six outputs which meet the following requirements:

OUTPUT	OUTPUT VOLTAGE	NOISE
120 VDC (1)	120 (±6) vdc (less than ±1.5 vdc from Lo to Hi bus voltage)	0.5 V P-P max
28 VDC (3)	28 (±1.4) vdc	0.2 V P-P max
+20 VDC (1)	20 (±1.2) vdc	
-20 VDC (1)	-20 (±2.0) vdc	

The noise voltage shall be measured at the power supply load.

3-4.2 FAILURE INDICATIONS. The following failure indications shall be present at the LGC interface.

3-4.2.1 IMU Failure Indications. The IMU Failure indication shall be generated at the LGC interface under any one of the following conditions, and shall consist of a relay closure on 28 volts supplied by the ISS to the LGC.

a. Any gimbal servo error signal is between 5.5 and 7.5 volts rms. When the error signal is greater than 7.5 volts, the failure indication shall always be present. When the error signal is less than 5.5 volts, the failure indication shall never be present.

TABLE IV (Continued)

PULSES FROM ZERO	IDEAL TABLE DEVIATION FROM REFERENCE POINT			
23264	255°	35'	19"	±40"
24576	270°	00'	10"	±40"
25376	278°	47'	31"	±40"
27872	306°	12'	49"	±40"
29984	329°	25'	01"	±40"
32480	356°	50'	19"	±40"
32768	360°	00'	10"	±40"

3-4.5.3 Ambiguity Circuit Test. With gimbal angles preset to 225°, 00' 00" and the ISS in the Inertial mode, CDU Zero shall be commanded, executed and released. The CDU shall generate $\Delta\theta_G$ pulses equal to the preset gimbal angle after CDU Zero is released (12, 288 ±2).

3-4.5.4 ISS CDU INHIBIT. While in the ISS CDU INHIBIT (READ INHIBIT) mode, the gimbal shall be moved by means of the gimbal positioner ±1°. No $\Delta\theta_G$ pulses shall be generated.

3-4.6 CDU D/A FUNCTIONING. With the Enable Error Counter signal present at the AGC interface, the conditions in paragraphs 3-4.6.1 through 3-4.6.3 shall be met at each of the five CDU 800 CPS Command interfaces with the CSM. In addition, the conditions in paragraphs 3-4.6.4 through 3-4.6.6 shall be met at each of the two CDU DC Command interfaces with the CSM.

3-4.6.1 CDU 800 CPS Command Null. The CDU 800 CPS Command interface shall have an in phase null of 10 mv maximum and a maximum of 10 mv quadrature as measured on a PAVM. The total null voltage shall be less than 56 mv rms.

3-4.6.2 800 CPS Scale Factor. Each pulse applied to the error angle counter will cause a change of 13 (±1.3) mv. The error signal shall be in phase with the CDU command reference when 1, 2, 4, 8, 16, 32, 64, 128, 256 and 384 plus pulses are applied. The error signal shall be out of phase when these negative pulses are applied from null.

3-4.6.3 800 CPS Saturation. The CDU 800 CPS command interface signal shall exhibit saturation when a minimum of 384 plus or minus $\Delta\theta_C$ pulses are applied to the error angle counter. The saturated voltage shall not exceed 5.1 volts.

b. **Pulse Characteristics.** The "p" and "n" pulses of each PIPA shall meet the following specifications at the LGC interfaces:

Polarity:	Positive
Amplitude	7±3 volts
Duration:	3.5 to 7.0 microsecs at 4 volts amplitude
Noise:	Less than 0.5 volt P-P

3-4.9.3 IRIG Scale Factor Measurement. The IRIG Scale Factor shall be measured at a dc power source input of (simulated LEM ISS Operate Bus) 28.0±0.25 vdc. No measured value shall deviate from $2\pi/2^{21}$ radians/pulse by more than 1375 parts per million, nor shall the peak to peak spread of all the ISS Measurements exceed 1375 parts per million.

3-4.9.4 IRIG Performance. The IRIG performance shall be measured as described in the following paragraphs:

3-4.9.4.1 Stability with Respect to Retest Values. The following requirements shall be met at a dc power source input of (Simulated LEM/ISS Operate Bus) of 28.0±0.25 vdc prior to workmanship vibration.

a. BIAS DRIFT (BD) shall not deviate by more than ±5 Meru from the retest value.
b. Drift due to specific force along the input axis, (ADIA), shall not deviate by more than ±10 Meru/g from the retest value.
c. Drift due to specific force along the spin reference axis (ADSRA), shall not deviate by more than ±5 Meru/g from the retest value.

3-4.9.4.2 Maximum Limits and Stability during ISS Testing. In addition to the Pre-vibration Measurement specified in 3-4.9.4.1, BD, ADIA, and ADSRA shall be measured following workmanship vibration with a dc source input (simulated LEM ISS Operate Bus) of 28.0±0.25 vdc. All ISS measurements, both pre-vibration and post-vibration, of the IRIG performance values shall not exceed the values listed below. In addition, the IRIG performance values shall meet the stability requirements of 3-4.9.5.

BD	15 meru maximum
ADIA	100 meru/g maximum
ADSRA	40 meru/g maximum

3-4.9.5 PIPA and IRIG Stability Requirements.

3-4.9.5.1 Calculation of PIPA and IRIG Stability Terms. The coefficient stability terms (D_1, D_2, and D_3) shall be calculated after each data point to determine if they exceed the maximum values. The coefficient stability terms shall be calculated as follows:

Equations for Calculating Stability Terms

a. $D_1 = |X_{i-1} - X_i|$

b. $D_2 = |X_{i-1} - X_i| + |X_{i-2} - X_{i-1}|$

c. $D_3 = |X_{i-1} - X_i| + |X_{i-2} - X_{i-1}| + |X_{i-3} - X_{i-2}|$.

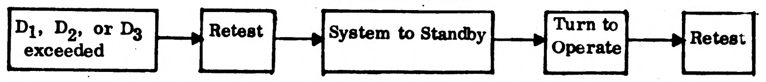
Where: X_i is last data point,
X_{i-1} is last previous data point (ISS or G&N),
X_{i-2} is last data point before X_{i-1} (ISS or G&N), and
X_{i-3} is last data point before X_{i-2} (ISS or G&N).

Maximum Values for Coefficient Stability Terms

	COEFFICIENT	UNITS	D_1	D_2	D_3
a.	PIPA Bias (A_b)	cm/sec^2	0.50	0.70	0.90
b.	PIPA Scale Factor (SF)	ppm	400	500	600
c.	IRIG Bias Drift (BD)	meru	6.0	9.0	11.0
d.	IRIG IA Acceleration Drift (ADIA)	meru/g	17.0	33.0	40.0
e.	IRIG SRA Acceleration Drift (ADSRA)	meru/g	14.0	21.0	25.0

3-4.9.5.2 Retest. If the D_1, D_2, or D_3 value for any PIPA or IRIG exceeds the maximum value given in 3-4.9.5.1, that PIPA or IRIG shall be retested in the sequence shown below. The coefficient stability terms shall then be recalculated. If the maximum value for D_1, D_2, or D_3 is exceeded after the retest sequence has been completed, the criteria of 3-4.9.5.3 (IRIG's) or 3-4.9.5.4 (PIPA's) shall apply.

Retest Sequence



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APOLLO G&N Specification
ATP 6015497 REV J
Original Issue Date:
Release Authority: TDRR 17912
Class A Release
TDRR [redacted]
CODE IDENT NO. 80230

ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

Declassified per para. II. B. 6. e(3) of SC6-11 REV 1, dated 1 Jan 1966

Signed RDGeiger Dept. 32-17 Date 6-8-66

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals AC	Approvals NASA
10/26/65	A	23536	All	WK	A. C. METZGER
1/18/65	B	25379	2, 6-11, 13-19, 21-23	WK	TM
5/11/66	C	28710	1, 2, 4, 6, 7 9 10, 11, 16-20, 24	MGM	ACM
6/8/66	D	29533	5, 6, 13-16, 21	MGM	--
10/13/66	E	31516	12	MGM EA	WLS
11/17/66	F	31986	12, 13	MGM EA	WLS
3/31/67	G	33374	6, 8, 10, 11, 13, 15 thru 26	MGM EA	WLS
			Was 25 pages; now 26 pages.		
6/8/67	H	33910	2, 6, 10, 15, 18, 19	MGM EA	WLS
9/1/67	J	34429	3, 12, 21-26; was 26 pages, now 32 pages.	WS EA	WLS

This specification consists of page 1 to 32 inclusive.

APPROVALS	A. C. METZGER NASA/MSC	Robert MIT/IL 10/26/65	AC

3. TEST REQUIREMENTS

3-1 GENERAL. The tests specified herein shall be conducted to insure that the Assembly meets the operating characteristics of Section 3-4. The tests are listed by JDC numbers in Table V. The test limits were chosen to insure that the assembly meets the operating characteristics of Section 3-4. All limits specified on the data sheets reflect the requirements stated in Section 3-4 except in certain cases where a parameter is indirectly verified through the measurement of a related parameter or where the test mechanization adds significant measurement errors. The JDC test method and JDC data sheet limits which apply to such cases are listed in Section 5. To insure that the latest version of a JDC is used, the JDC revision shall be verified with the Systems Identification and Data List (SIDL). The JDC's shall be executed in the order shown in Figure 1. Test data must be recorded to all significant figures provided by the instrument. Calculations should be carried out and recorded up to, but not beyond the significant figures carried in the MIN. and MAX. columns of the JDC data sheets. Copies of all final value data sheets shall be added to the Acceptance Data Package.

3-2 TEST EQUIPMENT. In addition to the equipment that is normally required to perform a certain task, the test equipment specified in Table I is required to test the Assembly.

TABLE I - TEST EQUIPMENT

(To be defined)

3-4.4.1 IMU Caging. Upon closing the IMU cage switch, with all Gimbal Angles initially set at 180 (±5)°, all three gimbal angles shall return to 0 (±1)° within 5 seconds, and the "IMU CAGE" discrete shall be present at the CDU/LGC interface. Care must be taken when performing this test to ensure that the gyro wheels are turned off.

3-4.4.2 Gimbal Friction. Each gimbal shall be slewed by pulse torquing the IRIG's through at least one revolution in each direction. The torque required, as measured by monitoring the torque motor current, shall not exceed 125 ma.

3-4.4.3 Steady State Requirements. With the three stabilization loops in an inertial stabilization mode, the steady state loop error signals shall be as follows:

a. The steady state gimbal error signals shall have less than 1.0 volt quadrature, and less than 60 MV in-phase, as read on the PAVM.

b. The torque motor voltages as measured on the PAVM with function switch on "total" shall be less than 10 volts rms.

3-4.4.4 Step Responses Requirements. A dc step input as shown below shall be applied to each respective torque drive amplifier. After steady state is reached, this voltage shall be removed. The gimbal error signal shall be monitored.

a. The inner and middle gimbal error signals shall have a maximum of 3 oscillation peaks outside a 5 percent tolerance band of the final value. The outer gimbal error signal shall have a maximum of 5 oscillation peaks outside a 5 percent tolerance band of the final value.

b. The time for the error signal to reach and stay within 5 percent of the initial value shall be less than 100 milliseconds.

c. DC step input:

Inner Gimbal	10.0 (±1.0) VDC
Middle	5.0 (±0.5) VDC
Outer	5.0 (±0.5) VDC

4-5 OPERATING CHARACTERISTIC/TEST PROCEDURE CROSS REFERENCE INDEX.

Operating Characteristic	JDC	Notes
3-4.1	16033	
	16039	
3-4.1.1	16039	5-1.1
3-4.1.2	16039	
3-4.1.3	16033	5-1.2
	16039	
3-4.1.4	16039	
3-4.1.5	16098	
3-4.1.6	16039	
3-4.2.1	16079	5-1.3
3-4.2.2	16097	
3-4.3	16033	5-1.4
3-4.4.1	16110	5-1.5
3-4.4.2	16075	
3-4.4.3	16106	
3-4.4.4	16075	
3-4.4.5	16075	
3-4.5.1	16082	5-1.6
	16083	
	16084	
3-4.5.2	16098	
3-4.5.3	16108	
3-4.5.4	16108	
3-4.6.1	16080	
3-4.6.2	16080	
3-4.6.3	16080	
3-4.6.4	16080	
3-4.6.5	16080	
3-4.6.6	16080	
3-4.7.1	16108	
3-4.7.2	16108	5-1.7
3-4.8	16039	5-1.8
	16194	
3-4.9.1	16155	
	16156	
	16157	
3-4.9.2.1	16200	
	16202	
	16204	
	16201	
	16203	
	16205	
3-4.9.2.2	16067	5-1.9

Operating Characteristic	JDC	Notes
3-4.9.3	16238	
	16241	
	16244	
3-4.9.4.2	16236	
	16239	
	16242	
	16237	
[illegible]	16240	
	16243	
3-4.9.5.1	16201	
	16203	
	16205	
	16236	
	16239	
	16242	
	16237	
	16240	
	16243	
3-4.9.5.2	16201	
	16203	
	16205	
	16236	
	16239	
	16242	
	16237	
	16240	
	16243	
3-4.10.1	16164	
	16161	
3-4.10.2	16163	
3-4.10.3	16169	
	16162	
	16165	
3-4.10.4	16161	
	16166	
	16167	
	16170	
	16163	
3-4.10.5	16179	
3-4.10.6	16194	

5. NOTES

5-1 TEST PROCEDURE DIFFERENCES. The following is a listing of JDC test methods or JDC data sheet limits that do not directly reflect the requirements specified in Section 3-4.

5-1.1 800 CPS 1% SUPPLY. (Reference 3-4.1.1) With sync pulses applied by the CMS, the number of 100 KC clock pulses from the preset counter accumulated during 6400 cycles of the supply output shall be 800,000 (±1). With no sync pulses applied, the number of clock pulses accumulated during 6400 cycles of the supply output shall be 855,000 (±54,000).

5-1.2 3200 CPS 1% SUPPLY. (Reference 3-4.1.3.) With sync pulses applied by the CMS the number of 100 KC clock pulses from the preset counter accumulated during 10240 cycles of the supply output shall be 320,000 (±1). With no sync pulses applied, the number of clock pulses accumulated during 10240 cycles of the supply output shall be 335,000 (±11,000).

5-1.3 IMU FAILURE INDICATIONS. (Reference 3-4.2.1.) When each gimbal is moved slowly in turn until the gimbal servo error exceeds 7.5V rms, the IMU FAIL lamp on the GSE Monitor panel shall light. When the IRIG is caged, the IMU FAIL lamp shall go out.

5-1.4 TEMPERATURE CONTROL REQUIREMENTS. (Reference 3-4.3.) The temperature of the Inertial Components shall be monitored. The PIPA and IRIG temperatures shall be monitored. The PIPA and IRIG temperature shall be defined as stabilized when the change in the average temperature output from the GSE is less than 0.05 vdc after a period of 30 minutes.

a. The IRIG temperature output from the GSE shall be 0 (±1.25) vdc after stabilization in Operate.

b. The PIPA temperature output from the GSE shall be 0.25 (±0.75) vdc after stabilization in Operate.

c. The PIPA temperature output from the GSE shall be within 0.25 vdc of the output recorded in b. above after 15 minutes in Operate.

d. The IRIG temperature output from the GSE shall be within 0.25 vdc of the output recorded in a. above after 30 minutes in Operate.

e. The PIPA temperature output from the GSE shall be within 0.50 vdc of the output recorded in b. above after stabilization in Standby.

5-1.5 IMU CAGING. (Reference 3-4.4.1.) Upon closing the gimbal drive loops with the IMU Cage discrete present and all three gimbal positioners set at 178 (±1)°, the gimbals shall return to zero, as indicated by the 1X resolver sine signals reaching 0(±1) volt, within 5 seconds and the IMU Cage discrete shall be present at the CDU/LGC interface as indicated by the IMU CAGE pushbutton on the Test Control panel lighting.

5-1.6 GIMBAL ANGLES. (Reference 3-4.5.1.) The corrected rotary table readout shall be within the values specified.

IG and MG CDU DYNAMIC REPEATING TEST

PULSES FROM ZERO	CORRECTED ROTARY TABLE READOUT			
0	60°	00'	00"	±0"
-1	60°	00'	30"	±56"
-224	62°	27'	29"	±56"
-228	63°	09'	41"	±56"
-480	65°	16'	14"	±56"
-512	65°	37'	20"	±56"
-544	65°	58'	26"	±56"
-736	68°	04'	59"	±56"
-800	68°	47'	11"	±56"
-1024	71°	14'	50"	±56"
-1248	73°	42'	29"	±56"
-1312	74°	24'	41"	±56"
-1504	76°	31'	14"	±56"
-1536	76°	52'	20"	±56"
-1568	77°	13'	26"	±56"
-1760	79°	19'	59"	±56"
-1824	80°	02'	11"	±56"
-2048	82°	29'	50"	±56"
-2272	84°	57'	29"	±56"
-4384	108°	09'	41"	±56"
-6680	135°	34'	59"	±56"
-8192	149°	59'	50"	±56"
-8992	158°	47'	11"	±56"
-11,488	186°	12'	29"	±56"
-13,600	209°	24'	41"	±56"
-16,096	236°	49'	59"	±56"
-16,384	239°	59'	50"	±56"
-18,208	206°	02'	11"	±56"
-18,656	264°	57'	29"	±56"
-20,768	288°	09'	41"	±56"
-23,264	315°	34'	59"	±56"
-24,576	329°	59'	50"	±56"
-25,376	338°	47'	11"	±56"
-27,872	6°	12'	29"	±56"
-29,984	29°	24'	41"	±56"
-32,480	56°	49'	59"	±56"
-32,768	59°	59'	50"	±56"

OG CDU DYNAMIC REPEATING TEST

PULSES FROM ZERO	CORRECTED ROTARY TABLE READOUT			
0	00°	00'	00"	±0"
+1	00°	00'	50"	±56"
+224	02°	27'	49"	±56"
+288	03°	10'	01"	±56"
+480	05°	16'	34"	±56"
+512	05°	37'	40"	±56"
+544	05°	58'	46"	±56"
+736	08°	05'	19"	±56"
+800	08°	47'	31"	±56"
+1024	11°	15'	10"	±56"
+1248	13°	42'	49"	±56"
+1312	14°	25'	01"	±56"
+1504	16°	31'	34"	±56"
+1536	16°	52'	40"	±56"
+1568	17°	13'	46"	±56"
+1760	19°	20'	19"	±56"
+1824	20°	02'	31"	±56"
+2048	22°	30'	10"	±56"
+2272	24°	57'	49"	±56"
+4384	48°	10'	01"	±56"
+6880	75°	35'	19"	±56"
+8192	90°	00'	10"	±56"
+8992	81°	12'	49"	±56"
+11,488	53°	47'	31"	±56"
+13,600	30°	35'	19"	±56"
+16,096	03°	10'	01"	±56
+16,384	00°	00'	10"	±56"
+18,208	20°	02'	31"	±56"
+18,656	24°	57'	49"	±56"
+20,768	48°	10'	01"	±56"
+23,264	75°	35'	19"	±56"
+24,576	90°	00'	10"	±56"
+25,376	81°	12'	49"	±56"
+27,872	53°	47'	31"	±56"
+29,984	30°	35'	19"	±56"
+32,480	03°	10'	01"	±56"
+32,768	00°	00'	10"	±56"

5-1.7 COARSE ALIGN TRANSIENT AND SLEWING PERFORMANCE. (Reference 3-4.7.2) With the Coarse Align and the Error Counter enable signals present at the LGC interface, the following requirements shall be met.

a. Slew Test. When a total of 4096 pulses is applied on the plus CDU command line, the gimbal positioner dial shall change by 180 (±5)°. When the loop is then disabled and CDU Zero is commanded and removed, the CDU shall issue 16,384 (±128)Δ_{θ_G} pulses. When a total of 4096 pulses is then applied on the minus CDU command line, the gimbal positioner dial shall change by 180 (±5)°. When the loop is then disabled and CDU Zero is commanded and removed, the CDU shall issue 0 (±256)Δ_{θ_G} pulses. The 4096 pulses shall be applied in 64 bursts of 64 pulses each at a rate of 1 burst each 240 milliseconds.

b. Transient Test. For a burst of 256 pulses, the gimbal angle, as indicated by the 1X resolver sine signal, shall reach final value (first crossing) within 0.70 seconds after the gimbal begins to move. The 1X sine signal recording (at a sensitivity of 500 MV/MM) shall exhibit no more than one overshoot in excess of one millimeter.

c. Test Rate Limiting. The maximum gimbal rate during Coarse Align shall not exceed 35° per second. This will be insured by noting that the time to the first final value crossing in b. above shall be greater than 0.30 seconds.

5-1.8 LEM 800 CPS EXCITATION INTERFACE. (Reference 3-4.8.) The 800 CPS Excitation Interface for the Rendezvous Radar resolvers, Gimbal Angle Sequence Transformation Assembly, attitude error demodulators, hand controllers, throttle controllers, and synchronization shall have the following characteristics when measured at the GSE interface. The amplitude shall be 28V rms ±1.5 percent. The frequency requirements for this signal are verified by 5-1.1.

5-1.9 PIPA PULSE CHARACTERISTICS. (Reference 3-4.9.2.2.b.) The polarity of the "p" and "n" pulses of each PIPA at the CMS interfaces shall be negative.

TABLE V

16009	IMU & PTA/PEA Mounting Fixture Installation on the Rotary Table
16010	Rotary Table Leveling Calibration Test
16011	IMU Mounting Fixture Alignment Test About the X and Y Axis
16012	IMU Mounting Fixture Alignment Test About the Z Axis
16013	Installation of the IMU on the IMU Mounting Fixture
16014	Installation of the Pulse Torquing Assembly to the PTA Holding Fixture Assembly on the Rotary Table
16017	CDU Installation
16018	PSA Installation
16019	Cable and Coolant Hose Connections
16029	G & N Coolant Supply Turn On - Turn Off
16030	Inertial Subsystem Turn Off
16031	Inertial Subsystem Test Initial Conditions
16032	Turn On of Optics Inertial Analyzer (OIA) Power
16033	First Time Turn On of Inertial Subsystem (ISS) Power
16034	Normal ISS and OIA Power Turn On
16039	Power Supply Tests
16067	PIPA Loop Tests (Loop Null Quadrature Test)
16075	Stabilization Loop Tests
16079	IMU Fail Detector Tests
16080	CDU D/A Converter Tests
16082	Inner Gimbal CDU Repeating Accuracy Test
16083	Middle Gimbal CDU Repeating Accuracy Test
16084	Outer Gimbal CDU Repeating Accuracy Test
16097	CDU Fail Detector Tests
16098	CDU Functional Tests
16106	Subsystem Mode Test (Previbration)
16108	Subsystem Mode Tests (Post Vibration)
16110	IMU Cage
16153	IRIG Degaussing
16155	X PIPA Calibration Module Adjustment
16156	Y PIPA Calibration Module Adjustment

TABLE V (CONT)

16157	Z PIPA Calibration Module Adjustment
16158	PIPA Null
16159	PIPA Degaussing
16160	Pulse Torque Electronics Tests
16161	PIPA Alignment (Tests to determine ϵ_{MGR}, α_{XZ}, θ_{HOGA}, ϵ_{FZ}, ϵ_{FLZ}, α_{BZ}, and a_{BX})
16162	PIPA Alignment (Zero Adjustment of the Middle Gimbal Resolver)
16163	PIPA Alignment (Test to determine α_{BZ}, a_{BZ}, α_{ZX}, ϵ_{MGA}, ϵ_{IGA})
16164	PIPA Alignment (Test to determine ϵ_{IGR}, ϵ_{FY}, and ϵ_{FLY})
16165	PIPA Alignment (Adjustment of the Inner Gimbal Resolver)
16166	PIPA Alignment (Test to determine α_{XY})
16167	PIPA Alignment (Test to determine α_{BY}, a_{BY}, and α_{YZ})
16168	PIPA Alignment (Test to determine ϵ_{OGR})
16169	PIPA Alignment (Zero Adjustment of the Outer Gimbal Resolver)
16170	PIPA Alignment (Test to determine α_{YX})
16178	Sealing of Precision Resolver Alignment Assembly
16179	IRIG Alignment Tests
16194	Flight Director Attitude Indicator Interface Tests
16200	X PIPA Bias and Input Axis Performance
16201	X PIPA Scale Factor Performance
16202	Y PIPA Bias and Input Axis Performance
16203	Y PIPA Scale Factor Performance
16204	Z PIPA Bias and Input Axis Performance
16205	Z PIPA Scale Factor Performance

TABLE V (CONT)

16206	PIPA Performance Test (High and Low Bus Voltage Tests)
16230	IRIG Performance Tests (Determination of Average Scale Factor for High and Low Bus Voltage)
16236	X IRIG Performance Test (Test to determine BDX and ADSRAX)
16237	X IRIG Performance Test (Test to determine BDX and ADIAX)
16238	X IRIG Performance Test (Test to determine $\Delta SF(G)_X^-$ and $\Delta SF(G)_X^+$)
16239	Y IRIG Performance Test (Test to determine BDY and ADSRAY)
16240	Y IRIG Performance Test (Test to determine BDY and ADIAY)
16241	Y IRIG Performance Test (Test to determine $\Delta SF(G)_Y^-$ and $\Delta SF(G)_Y^+$)
16242	Z IRIG Performance Test (Test to determine BDZ and ADSRAZ)
16243	Z IRIG Performance Test (Test to determine BDZ and ADIAZ)
16244	Z IRIG Performance Test (Test to determine $\Delta SF(G)_Z^-$ and $\Delta SF(G)_Z^+$)
16245	IMU and PTA Visual Mechanical Inspection
16246	PSA Visual Mechanical Inspection

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ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

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ASSEMBLY TEST PROCEDURE

FOR

APOLLO LEM INERTIAL SUBSYSTEM

Declassified per para. II.B.6.e(3) of SC6-11 REV 1, dated 1 Jan 1966

Signed: R.D. Geiger Dept. 32-17 Date: 6-8-66

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				DE	NASA
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(M) 5/14/70	M	38103	6, 18, 22, 29, 30	JS	MDH
2/4/71	N	38338	11, 24	MGM. EA	MDH

This specification consists of page 1 to 32 inclusive.

APPROVALS	A. C. Metzger **NASA/MSC**	John Miller 10/26/65	**MIT/IL**	W. Kupfer 10/26/65	C. J. Sudman J. Wachholz DE

3-4.2.2 CDU Failure Indications. The CDU Failure indication shall appear at the LGC interface approximately 3 seconds after any of the following conditions exist on any IMU axis. The discrete shall be a 28 VDC signal (into a 20K load). The fail indication shall disappear within 2 seconds after the condition is removed.

a. Fine Error: With the CDU zeroed, the failure indication shall not be present for a gimbal angle of 0° ±15', and shall be present for a gimbal angle of 1° ±15'.

b. Coarse Error: With the CDU zeroed, the failure indication shall not be present for a gimbal angle of 22.5° +0', -15', and shall be present for a gimbal angle of 33.75° ±15'.

c. Cosine $(\theta - \psi)$: With the CDU zeroed, and the gimbal angle set to 0±0.5°, the failure indication shall not be present. With the 16X IMU resolver outputs removed and the 16X sin and cosine CDU inputs shorted to ground, the failure indication shall be present.

d. Limit Cycle: With the CDU zeroed, and the CDU resolver inputs excited such that the CDU Read Counter Up Line oscillates at 200 cps rate a fail indication shall occur.

e. 14 VDC Fail: With the CDU zeroed, and a 2K load to CDU 0 VDC connected to the CDU ISS +14V T. P., a fail indication shall occur.

3-4.3 TEMPERATURE CONTROL REQUIREMENTS. The temperature of the Inertial Components shall be monitored. The PIPA and IRIG Temperature shall be defined as stabilized when the change in the average temperature is less than 0.1°F over a period of 30 minutes.

a. The IRIG temperature shall be 135 (±2.5)°F after stabilization in Operate.

b. The PIPA temperature shall be 130.5 (±1.5)°F after stabilization in Operate.

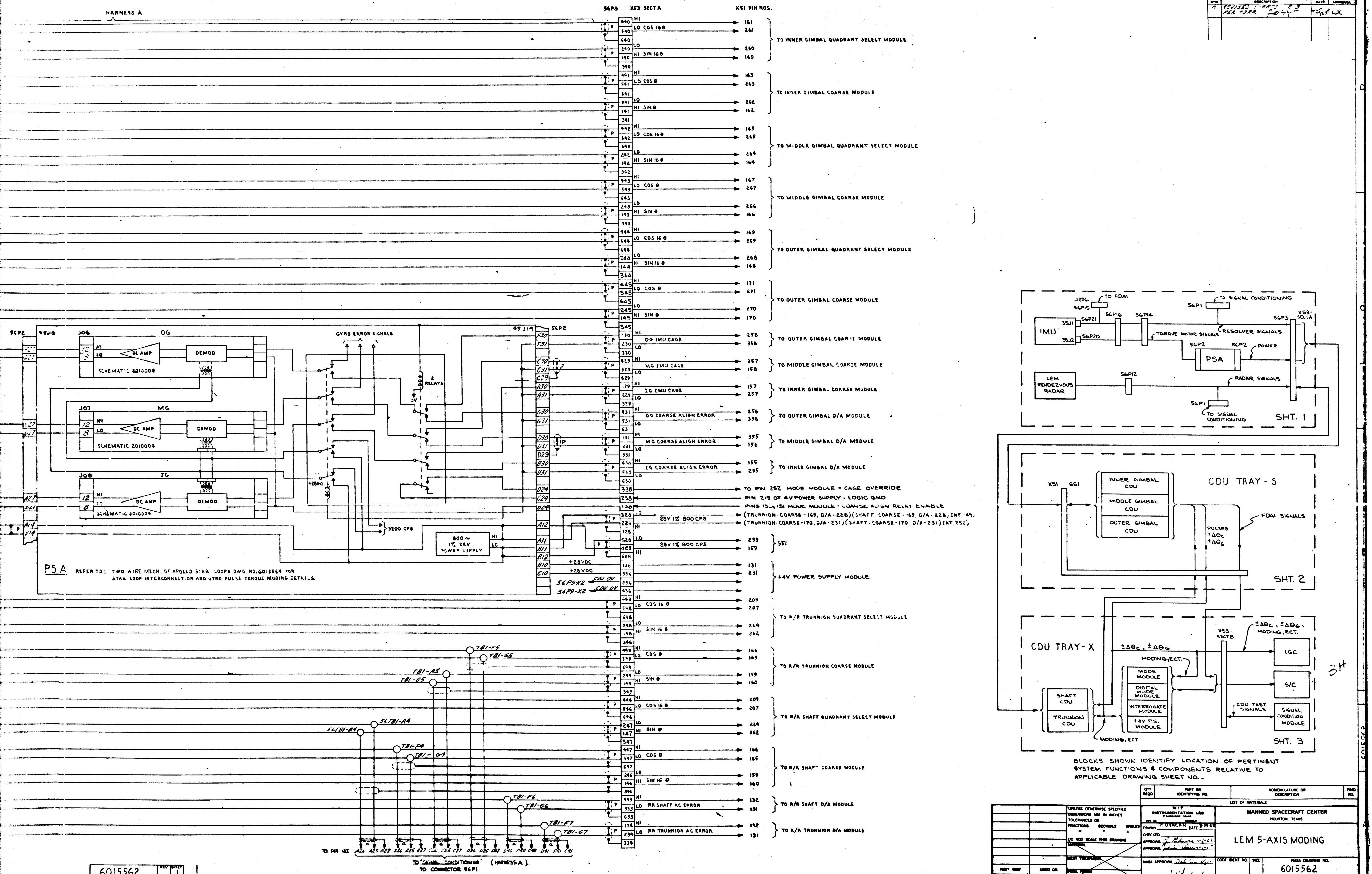
c. The PIPA temperature shall be within 0.5°F of the temperature recorded in b above after 15 minutes in Operate.

d. The IRIG temperature shall be within 0.7°F of the temperature recorded in a above after 30 minutes in Operate.

e. The PIPA temperature shall be within 1.0°F of the temperature recorded in b above after stabilization in Standby.

3-4.4 STABILIZATION AND GIMBAL ANGLE CONTROL LOOPS. In order to verify proper operation of the stabilization and gimbal angle control loops, the following characteristics shall be demonstrated.

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED SHEETS 1 & 3 PER TDRR 2044	5-[illegible]	[illegible]


5
4
3
2
1
HARNESS A
56P3
X53 SECT A
X51 PIN NOS.
440 HI 161
540 LO COS 16θ 261
640
240 LO 260
140 HI SIN 16θ 160
340
TO INNER GIMBAL QUADRANT SELECT MODULE
441 HI 163
541 LO COS θ 263
641
241 LO 262
141 HI SIN θ 162
341
TO INNER GIMBAL COARSE MODULE
442 HI 165
542 LO COS 16θ 265
642
242 LO 264
142 HI SIN 16θ 164
342
TO MIDDLE GIMBAL QUADRANT SELECT MODULE
443 HI 167
543 LO COS θ 267
643
243 LO 266
143 HI SIN θ 166
343
TO MIDDLE GIMBAL COARSE MODULE
444 HI 169
544 LO COS 16θ 269
644
244 LO 268
144 HI SIN 16θ 168
344
TO OUTER GIMBAL QUADRANT SELECT MODULE
445 HI 171
545 LO COS θ 271
645
245 LO 270
145 HI SIN θ 170
345
TO OUTER GIMBAL COARSE MODULE
130 HI OG IMU CAGE 258
230 LO 358
330
TO OUTER GIMBAL COARSE MODULE
429 HI MG IMU CAGE 357
529 LO 158
629
TO MIDDLE GIMBAL COARSE MODULE
129 HI IG IMU CAGE 157
229 LO 257
329
TO INNER GIMBAL COARSE MODULE
431 HI OG COARSE ALIGN ERROR 256
531 LO 356
631
TO OUTER GIMBAL D/A MODULE
131 HI MG COARSE ALIGN ERROR 355
231 LO 156
331
TO MIDDLE GIMBAL D/A MODULE
430 HI IG COARSE ALIGN ERROR 155
530 LO 255
630
TO INNER GIMBAL D/A MODULE
338 TO PIN 252 MODE MODULE - CAGE OVERRIDE
238 PIN 219 OF 4V POWER SUPPLY - LOGIC GND
138 PINS 150, 151 MODE MODULE - COARSE ALIGN RELAY ENABLE
328 LO 28V 1% 800CPS (TRUNNION: COARSE - 169, D/A - 228)(SHAFT: COARSE - 169, D/A - 228) INT 149,
228 HI (TRUNNION: COARSE - 170, D/A - 231)(SHAFT: COARSE - 170, D/A - 231) INT 252,
128
528 LO 28V 1% 800 CPS 259
428 HI 159
628
S51
+28VDC 136 131
+28VDC 336 231
56P9-X2 CDU 0V 236
56P9-X2 CDU 0V 436
+4V POWER SUPPLY MODULE
448 HI COS 16θ 209
548 LO 207
648
248 LO SIN 16θ 264
148 HI 262
348
TO R/R TRUNNION QUADRANT SELECT MODULE
449 HI COS θ 166
549 LO 165
649
249 LO SIN θ 159
149 HI 160
349
TO R/R TRUNNION COARSE MODULE
446 HI COS 16θ 209
546 LO 207
646
247 LO SIN θ 264
147 HI 262
347
TO R/R SHAFT QUADRANT SELECT MODULE
447 HI COS θ 166
547 LO 165
647
246 LO SIN 16θ 159
146 HI 160
346
TO R/R SHAFT COARSE MODULE
433 HI RR SHAFT AC ERROR 132
533 LO 131
633
TO R/R SHAFT D/A MODULE
134 HI RR TRUNNION AC ERROR 132
234 LO 131
334
TO R/R TRUNNION D/A MODULE
P
56P2
45J18
J06
OG
HI
LO
DC AMP
DEMOD
SCHEMATIC 2010004
J07
MG
J08
IG
A27
D27
C27
A14
B14
GYRO ERROR SIGNALS
2 RELAYS
0V
+28V
3200 CPS
800 ~ 1% 28V POWER SUPPLY
45 J19
F30
F31
C30
C31
C29
A30
A31
G30
G31
D30
D31
D29
B30
B31
D24
C24
B24
A12
A11
B11
B12
B10
C10
PSA
REFER TO: TWO WIRE MECH. OF APOLLO STAB. LOOPS DWG NO. 6015564 FOR STAB. LOOP INTERCONNECTION AND GYRO PULSE TORQUE MODING DETAILS.
TB1-F5
TB1-G5
TB1-A5
TB1-B5
56TB1-A4
56TB1-B4
TB1-F4
TB1-G4
TB1-F6
TB1-G6
TB1-F7
TB1-G7
TO PIN NO. A26 A25 A27 B26 B25 B27 C26 C25 C27 D26 D25 D27 D40 F40 C40 D41 F41 C41
TO "SIGNAL CONDITIONING" (HARNESS A)
TO CONNECTOR 56P1
J226
TO FDAI
56P15
56P21
56P20
35J1
35J2
IMU
56P16
56P14
TORQUE MOTOR SIGNALS
56P1
TO SIGNAL CONDITIONING
RESOLVER SIGNALS
56P3
X53-SECTA
56P2
PSA
POWER
LEM RENDEZVOUS RADAR
56P12
RADAR SIGNALS
SHT. 1
X51
S51
INNER GIMBAL CDU
MIDDLE GIMBAL CDU
OUTER GIMBAL CDU
CDU TRAY - S
PULSES ±Δθc ±ΔθG
FDAI SIGNALS
SHT. 2
CDU TRAY - X
±Δθc, ±ΔθG
MODING, ECT.
X53-SECT B
±Δθc, ±ΔθG, MODING, ECT.
LGC
S/C
SIGNAL CONDITION MODULE
CDU TEST SIGNALS
MODE MODULE
DIGITAL MODE MODULE
INTERROGATE MODULE
+4V P.S. MODULE
SHAFT CDU
TRUNNION CDU
MODING, ECT
SHT. 3
3H

BLOCKS SHOWN IDENTIFY LOCATION OF PERTINENT SYSTEM FUNCTIONS & COMPONENTS RELATIVE TO APPLICABLE DRAWING SHEET NO..

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN P. DUNCAN DATE 3-24-65
CHECKED
APPROVAL J. Gilmore 5-[illegible]-65
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

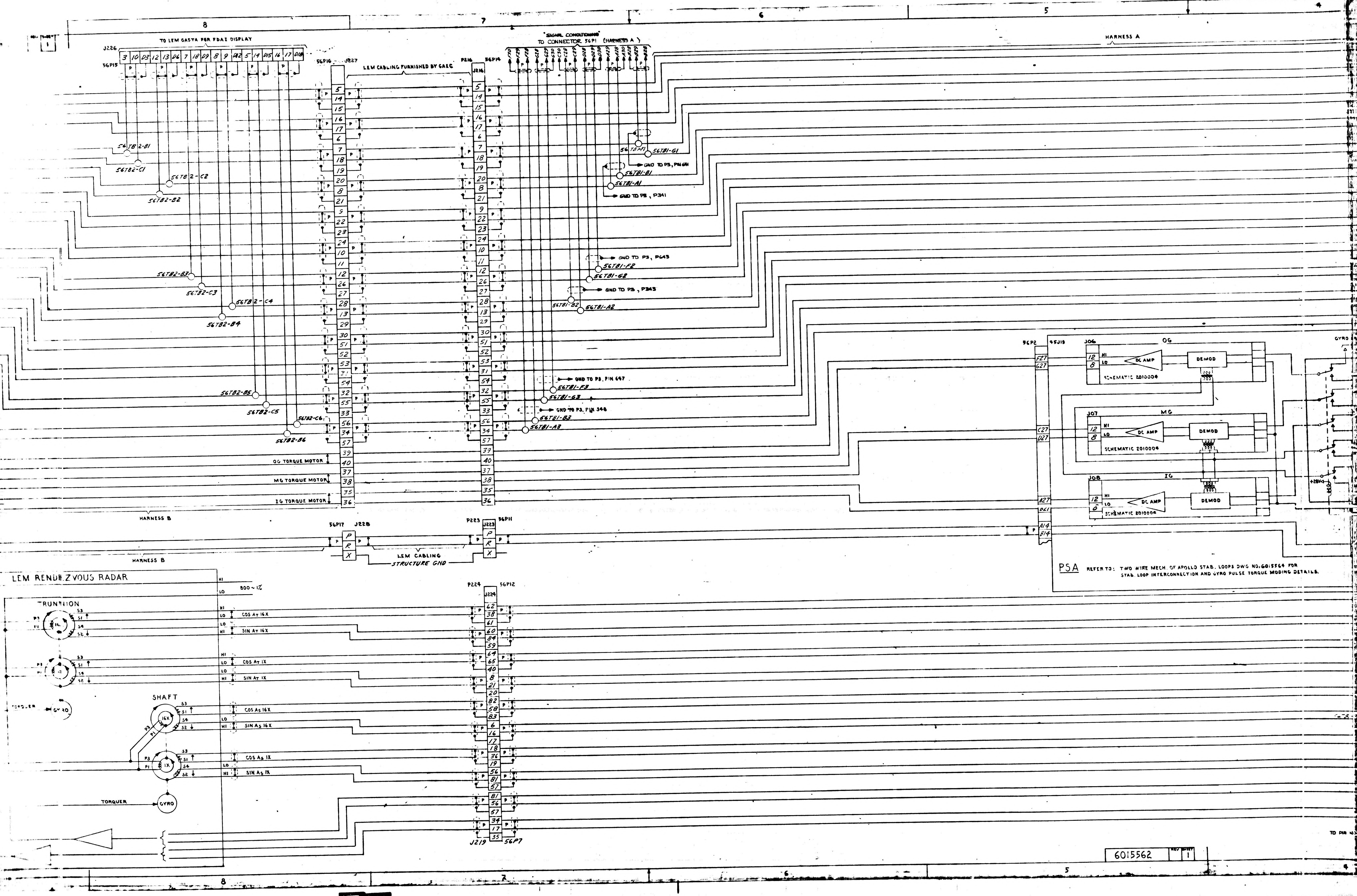
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

LEM 5-AXIS MODING

CODE IDENT NO. SIZE NASA DRAWING NO. 6015562
SCALE WT SHEET 1 OF 3

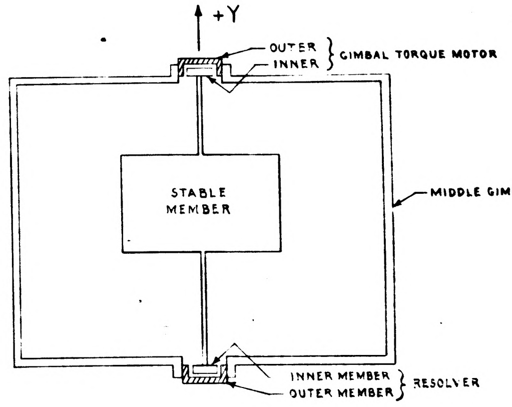
6015562	REV	SHEET 1

RETURN TO
Gilmore


8
7
6
5
4
TO LEM GASTA FOR FDAI DISPLAY
J226
56P15
56P16
J227
LEM CABLING FURNISHED BY GAEC
P216
56P14
J216
SIGNAL CONDITIONING
TO CONNECTOR 56P1 (HARNESS A)
HARNESS A
56TB2-B1
56TB2-C1
56TB2-C2
56TB2-B2
56TB2-B3
56TB2-C3
56TB2-C4
56TB2-B4
56TB2-B5
56TB2-C5
56TB2-C6
56TB2-B6
56TB1-G1
GND TO P3, PIN 641
56TB1-B1
56TB1-A1
GND TO P3, P341
GND TO P3, P643
56TB1-F2
56TB1-G2
GND TO P3, P343
56TB1-B2
56TB1-A2
GND TO P3, PIN 647
56TB1-F3
56TB1-G3
GND TO P3, PIN 348
56TB1-B3
56TB1-A3
OG TORQUE MOTOR
MG TORQUE MOTOR
IG TORQUE MOTOR
HARNESS B
56P17
J228
P223
56P11
J223
LEM CABLING
STRUCTURE GND
HARNESS B
56P2
95J19
J06
OG
DC AMP
DEMOD
SCHEMATIC 2010004
J07
MG
J08
IG
GYRO
+28V
PSA
REFER TO: TWO WIRE MECH. OF APOLLO STAB. LOOPS DWG NO. 6015564 FOR STAB. LOOP INTERCONNECTION AND GYRO PULSE TORQUE MODING DETAILS.
LEM RENDEZVOUS RADAR
HI
LO
800 ~ 1%
TRUNNION
COS AT 16X
SIN AT 16X
COS AT 1X
SIN AT 1X
TORQUER
GYRO
SHAFT
16X
1X
COS AS 16X
SIN AS 16X
COS AS 1X
SIN AS 1X
P224
56P12
J224
J219
56P7
TO PIN
6015562
REV
SHEET
1

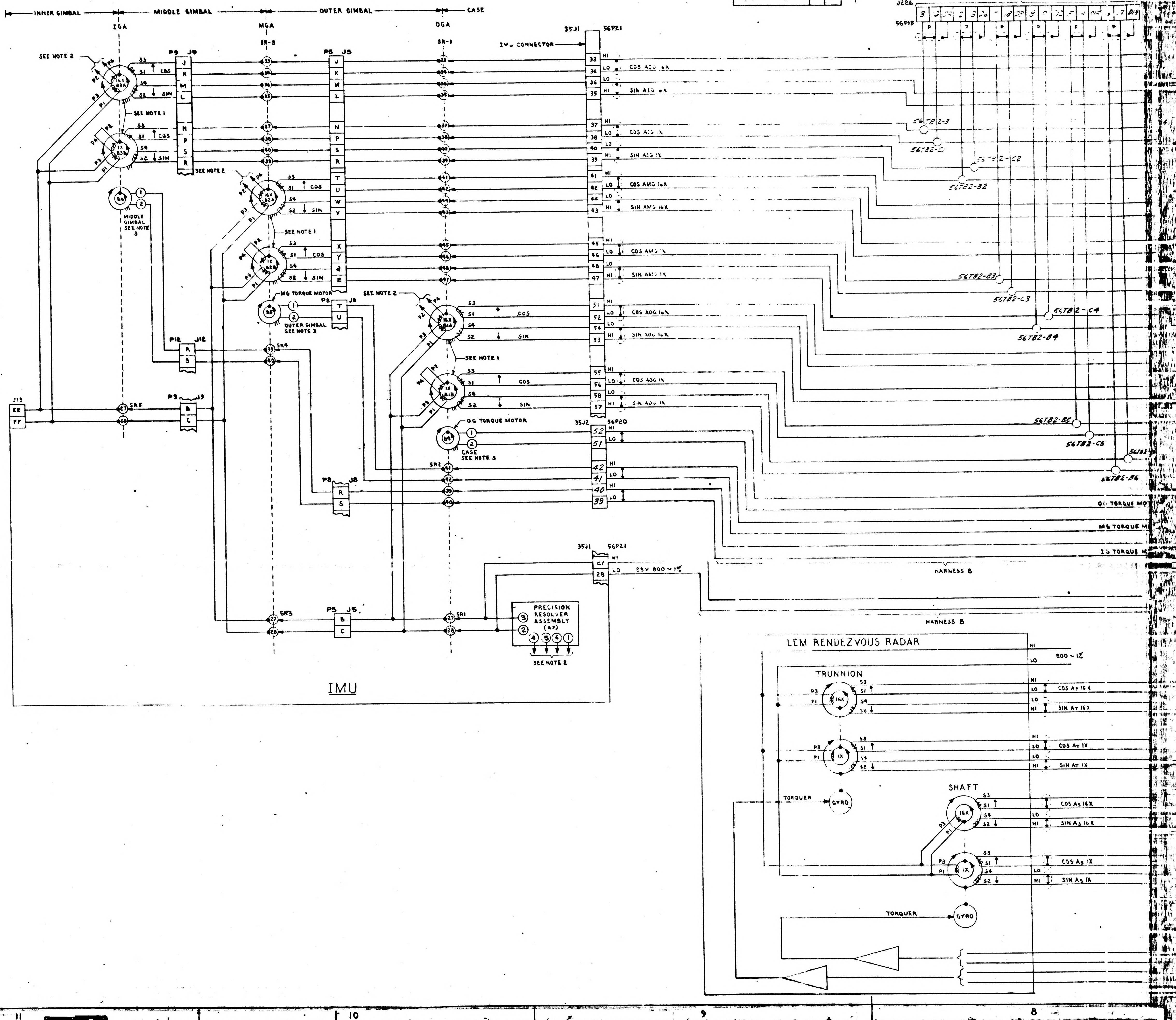
6015562 REV SHEET 1

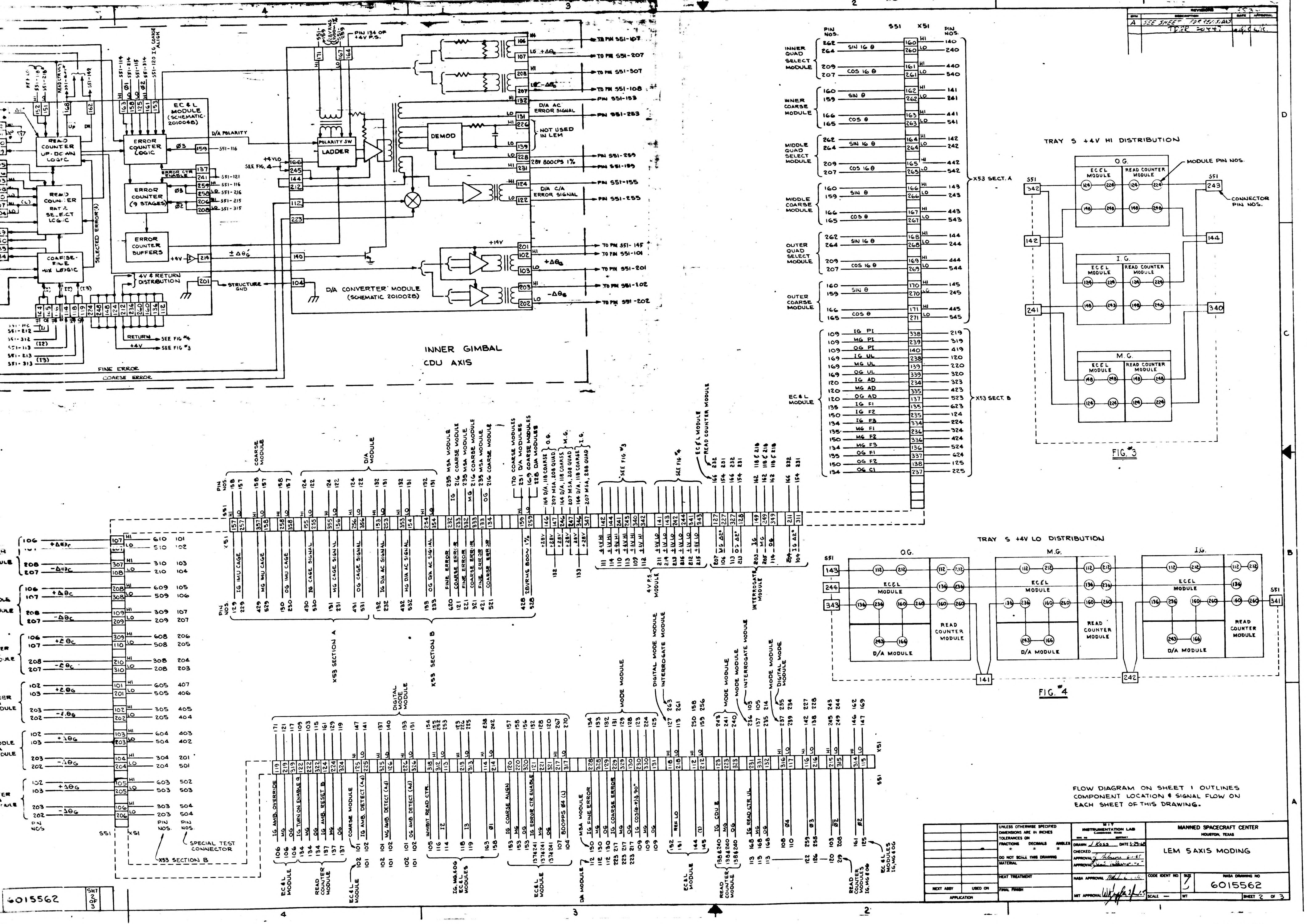
RESOLVER PHASING
VIEW I
(TYPICAL)


+Y
OUTER
INNER
GIMBAL TORQUE MOTOR
STABLE MEMBER
MIDDLE GIMBAL
INNER MEMBER
OUTER MEMBER
RESOLVER

PHASING NOTES:

1. a. FOR EACH GIMBAL AXIS THE RESOLVER INNER MEMBER IS FIXED TO THE INNERMOST GIMBAL MEMBER (SEE VIEW I) AND OUTER MEMBER IS FIXED TO THE OUTER MOST GIMBAL MEMBER.
   b. FOR EACH GIMBAL THE RESOLVER AND MOTOR ASSEMBLYS ARE LOCATED AT THE NEGATIVE AND POSITIVE ENDS OF THE GIMBAL, RESPECTIVELY
   c. IMU S/C INSTALLATION IN BLOCK II IS SUCH THAT THE IMU AXES, THE ZEROED GIMBAL AXES AND THE S/C AXES ARE ALIGNED.
   d. POSITIVE ANGLES ARE DEFINED ONE AXIS AT A TIME MEASURED FROM AN IMU ZERO GIMBAL POSITION.
   e. FOR INERTIALLY STABILIZED OPERATION, IMU GIMBALS INITIALLY ORTHOGONAL AND AT ZERO, CLOCKWISE ROTATION OF THE SPACECRAFT WHEN VIEWED OUT ALONG THE POSITIVE GIMBAL AXIS IS DEFINED AS POSITIVE ROTATION AND RESULTS IN POSITIVE GIMBAL ROTATION.
   f. THUS (PER "e" ABOVE), RELATIVE GIMBAL MOTION FOR A POSITIVE ROTATION WHEN VIEWED ALONG THE POSITIVE AXIS IS: (SEE VIEW I)
      (1) INERTIAL: CLOCKWISE ROTATION OF THE MIDDLE GIMBAL WITH RESPECT TO THE STABLE MEMBER,
      CLOCKWISE ROTATION OF THE OUTER GIMBAL WITH RESPECT TO THE MIDDLE GIMBAL, ETC.
      (2) COARSE ALIGNMENT: COUNTER CLOCKWISE ROTATION OF THE STABLE MEMBER WITH RESPECT TO THE MIDDLE GIMBAL,
      COUNTER CLOCKWISE ROTATION OF THE MIDDLE GIMBAL WITH RESPECT TO THE OUTER GIMBAL, ETC.
   g. POSITIVE ROTATION OF THE INNER RESOLVER AND OUTER RESOLVER MEMBERS (RELATIVE TO EACH OTHER AND IN ACCORDANCE WITH "f" ABOVE) IS SHOWN ON THE SCHEMATIC.
   h. POSITIVE ROTATION FROM THE ZERO GIMBAL POSITION IN THE FIRST QUADRANT OF ELECTRICAL DEGREES RESULTS IN AN INCREASING IN PHASE OUTER MEMBER SINE WINDING VOLTAGE AND DECREASING OUTER MEMBER COSINE WINDING VOLTAGE.
   i. IN PHASE VOLTAGE IS DEFINED WITH RESPECT TO THE REFERENCE 28V 800 c/s 1% EXCITATION. P3 IS THE HIGH ON ALL RESOLVER INNER MEMBERS. THE REFERENCE ARROWS BETWEEN THE OUTER MEMBER WINDINGS (S_2 ↑ S_4) IDENTIFY THE IN PHASE RELATIONSHIP FOR GIMBAL ANGLES FROM −90° TO 90° ELECTRICAL COS WINDING, 0° TO 180° ELECTRICAL SINE WINDING.
2. ZERO BIAS ADJUSTMENT WINDINGS CONNECTED TO PRECISION RESOLVER ASSEMBLY. ADJUSTMENT MADE IN PRECISION RESOLVER ASSEMBLY TO SET ELECTRICAL NULL OF COINCIDENT 16X RESOLVER TO COINCIDE WITH ZERO GIMBAL ANGLES (REFERENCE E-1230). SEE IMU WIRING DIAGRAM 2018615 FOR INTERCONNECTION DETAILS.
3. a. THE GIMBAL TORQUE MOTOR ROTOR IS FIXED TO THE INNER GIMBAL MEMBER (SEE VIEW I).
   b. POSITIVE ROTATION IS DEFINED AS IN NOTE "1" ABOVE AND SHOWN BY REFERENCE ARROWS ON THE MOTOR.
   c. A POSITIVE DC VOLTAGE APPLIED AT PIN 1 WITH RESPECT TO PIN 2 OF EACH MOTOR WILL RESULT IN POSITIVE GIMBAL ROTATION.


INNER GIMBAL
MIDDLE GIMBAL
OUTER GIMBAL
CASE
IGA
MGA
OGA
SR-3
SR-1
SEE NOTE 2
SEE NOTE 1
S3
S1
S4
S2
COS
SIN
P1
P2
P3
P4
16X B3A
1X B3B
16X B2A
1X B2B
16X B1A
1X B1B
P9
J9
P5
J5
P8
J8
P12
J12
J13
EE
FF
SR5
SR4
SR2
SR3
SR1
MIDDLE GIMBAL SEE NOTE 3
MG TORQUE MOTOR
OUTER GIMBAL SEE NOTE 3
OG TORQUE MOTOR
CASE SEE NOTE 3
PRECISION RESOLVER ASSEMBLY (A7)
SEE NOTE 2
IMU
IMU CONNECTOR
35J1
56P21
35J2
56P20
HI
LO
COS AIG 16X
SIN AIG 16X
COS AIG 1X
SIN AIG 1X
COS AMG 16X
SIN AMG 16X
COS AMG 1X
SIN AMG 1X
COS AOG 16X
SIN AOG 16X
COS AOG 1X
SIN AOG 1X
28V 800~1%
TO LEM GASTA FOR FDAI DISPLAY
J226
56P15
56TB2-B3
56TB2-C3
56TB2-C4
56TB2-B4
56TB2-B5
56TB2-C5
56TB2-B6
OG TORQUE MOTOR
MG TORQUE MOTOR
IG TORQUE MOTOR
HARNESS B
LEM RENDEZVOUS RADAR
800~1%
TRUNNION
16X
1X
COS AT 16X
SIN AT 16X
COS AT 1X
SIN AT 1X
TORQUER
GYRO
SHAFT
COS AS 16X
SIN AS 16X
COS AS 1X
SIN AS 1X



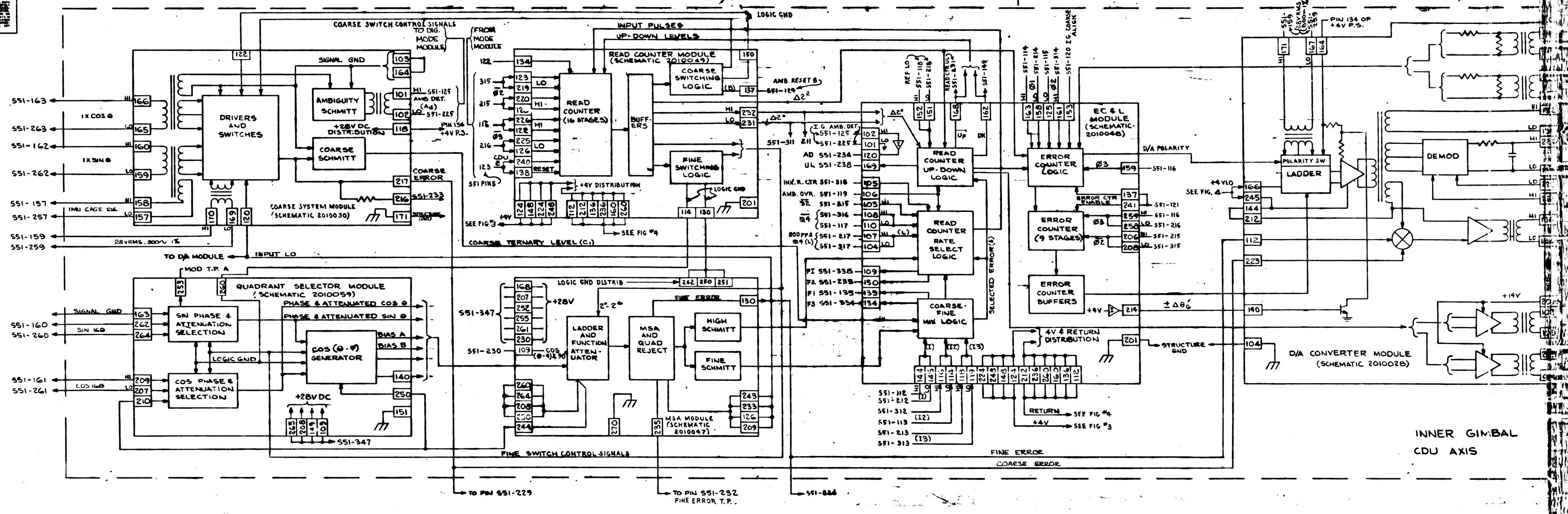
A SEE SHEET TDRR 20441
INNER GIMBAL
CDU AXIS
READ COUNTER UP-DOWN LOGIC
READ COUNTER RATE SELECT LOGIC
COARSE-FINE MIX LOGIC
ERROR COUNTER LOGIC
ERROR COUNTER (9 STAGES)
ERROR COUNTER BUFFERS
EC & L MODULE (SCHEMATIC 2010048)
D/A POLARITY
4V & RETURN DISTRIBUTION
STRUCTURE GND
FINE ERROR
COARSE ERROR
POLARITY SW
LADDER
DEMOD
D/A AC ERROR SIGNAL
NOT USED IN LEM
28V 800CPS 1%
D/A C/A ERROR SIGNAL
D/A CONVERTER MODULE (SCHEMATIC 2010028)
PIN 134 OF +4V P.S.
SEE FIG. 4
X53 SECT. A
X53 SECT. B
INNER QUAD SELECT MODULE
INNER COARSE MODULE
MIDDLE QUAD SELECT MODULE
MIDDLE COARSE MODULE
OUTER QUAD SELECT MODULE
OUTER COARSE MODULE
EC&L MODULE
TRAY S +4V HI DISTRIBUTION
MODULE PIN NOS.
CONNECTOR PIN NOS.
O.G.
I.G.
M.G.
EC&L MODULE
READ COUNTER MODULE
FIG. #3
TRAY S +4V LO DISTRIBUTION
D/A MODULE
FIG. #4
X53 SECTION A
X53 SECTION B
SPECIAL TEST CONNECTOR
X53 SECTION B
COARSE MODULE
D/A MODULE
DIGITAL MODE MODULE
MODE MODULE
INTERROGATE MODULE
4V P.S. MODULE
28VRMS 800~ 1%
24

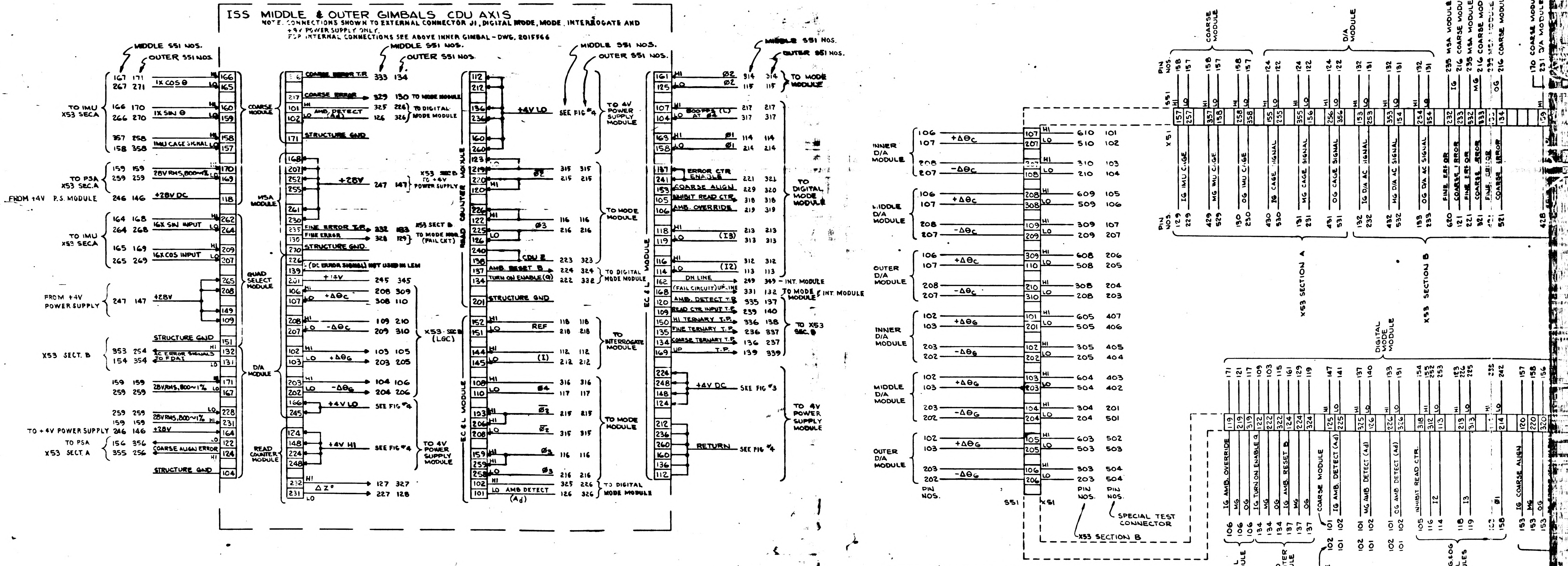
FLOW DIAGRAM ON SHEET 1 OUTLINES COMPONENT LOCATION & SIGNAL FLOW ON EACH SHEET OF THIS DRAWING.

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		MATERIAL	DRAWN J Koss DATE 3-29-65 CHECKED APPROVAL J. Helmore 6-1-65 APPROVAL	LEM 5 AXIS MODING
		HEAT TREATMENT	NASA APPROVAL	CODE IDENT NO. SIZE J NASA DRAWING NO 6015562
		FINAL FINISH	MIT APPROVAL	SCALE — WT SHEET 2 OF 3

6015562 SHT 2 OF 3

F-12

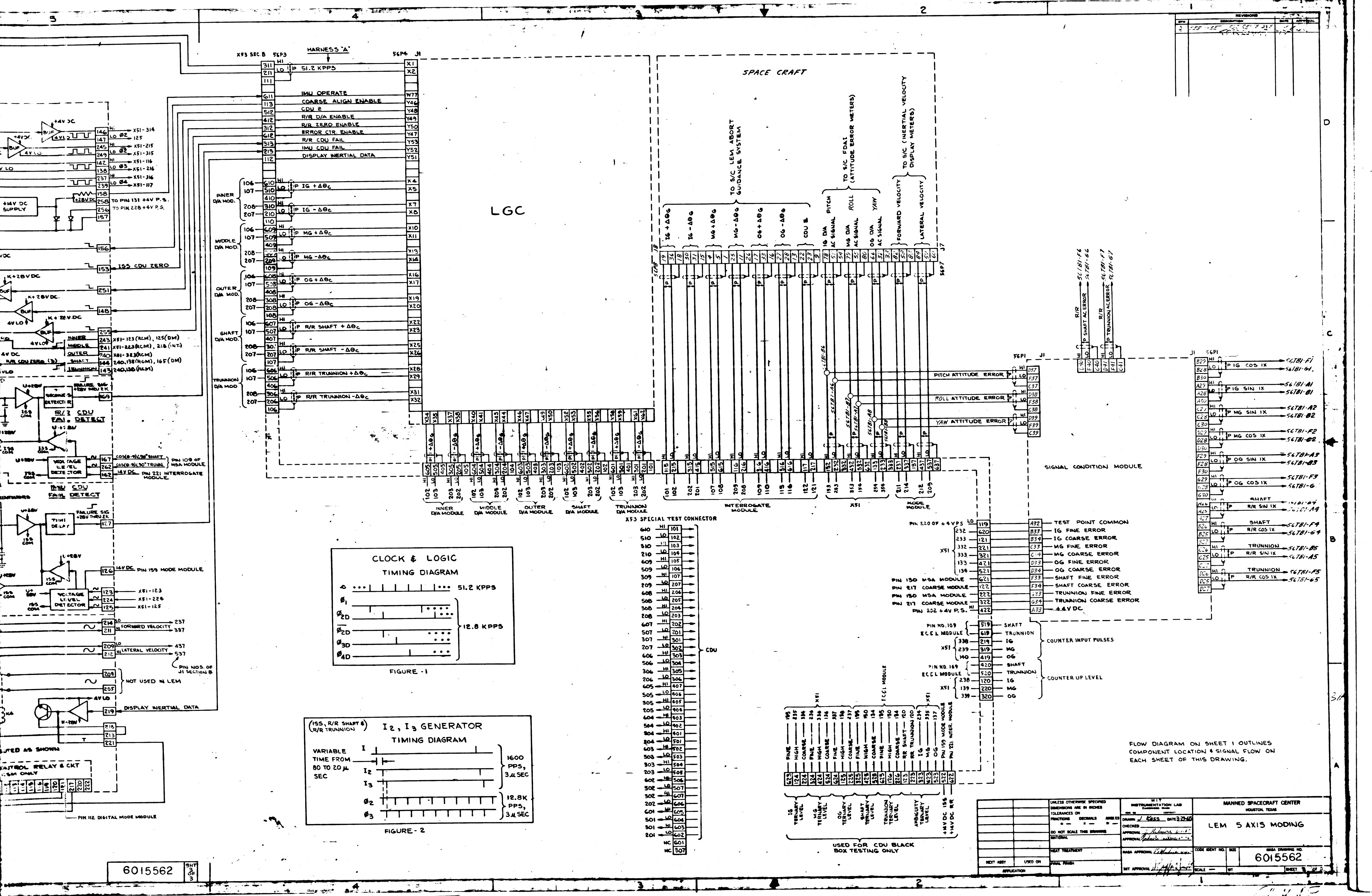

LOGIC GND
COARSE SWITCH CONTROL SIGNALS TO DIG. MODE MODULE
FROM MODE MODULE
INPUT PULSES
UP-DOWN LEVELS
READ COUNTER MODULE (SCHEMATIC 2010049)
DRIVERS AND SWITCHES
AMBIGUITY SCHMITT
COARSE SCHMITT
+28V DC DISTRIBUTION
COARSE SYSTEM MODULE (SCHEMATIC 2010030)
COARSE ERROR
READ COUNTER (16 STAGES)
BUFFERS
COARSE SWITCHING LOGIC
FINE SWITCHING LOGIC
+4V DISTRIBUTION
COARSE TERNARY LEVEL (C1)
READ COUNTER UP-DOWN LOGIC
READ COUNTER RATE SELECT LOGIC
COARSE-FINE MIX LOGIC
EC & L MODULE (SCHEMATIC 2010048)
ERROR COUNTER LOGIC
ERROR COUNTER (9 STAGES)
ERROR COUNTER BUFFERS
4V & RETURN DISTRIBUTION
D/A POLARITY
POLARITY SW
LADDER
DEMOD
D/A CONVERTER MODULE (SCHEMATIC 2010028)
QUADRANT SELECTOR MODULE (SCHEMATIC 2010059)
SIN PHASE & ATTENUATION SELECTION
COS PHASE & ATTENUATION SELECTION
COS (θ-ψ) GENERATOR
PHASE & ATTENUATED COS θ
PHASE & ATTENUATED SIN θ
LOGIC GND DISTRIB
LADDER AND FUNCTION ATTENUATOR
MSA AND QUAD REJECT
HIGH SCHMITT
FINE SCHMITT
MSA MODULE (SCHEMATIC 2010047)
FINE ERROR
FINE SWITCH CONTROL SIGNALS
COARSE ERROR
TO PIN S51-229
TO PIN S51-232 FINE ERROR T.P.
INNER GIMBAL CDU AXIS


ISS MIDDLE & OUTER GIMBALS CDU AXIS

NOTE: CONNECTIONS SHOWN TO EXTERNAL CONNECTOR J1, DIGITAL MODE, MODE, INTERROGATE AND +4V POWER SUPPLY ONLY. FOR INTERNAL CONNECTIONS SEE ABOVE INNER GIMBAL – DWG. 2015566

MIDDLE S51 NOS.
OUTER S51 NOS.
TO IMU X53 SEC A
TO PSA X53 SEC. A
FROM +4V P.S. MODULE
FROM +4V POWER SUPPLY
X53 SECT. B
TO +4V POWER SUPPLY
TO PSA X53 SECT. A
COARSE MODULE
MSA MODULE
QUAD SELECT MODULE
D/A MODULE
READ COUNTER MODULE
EC & L MODULE
TO 4V POWER SUPPLY MODULE
TO MODE MODULE
TO DIGITAL MODE MODULE
TO INTERROGATE MODULE
TO X53 SEC. B
INNER D/A MODULE
MIDDLE D/A MODULE
OUTER D/A MODULE
S51
X51
PIN NOS.
SPECIAL TEST CONNECTOR
X53 SECTION A
X53 SECTION B
X53 SECTION B
DIGITAL MODE MODULE

6015562 SHT 2 OF 3

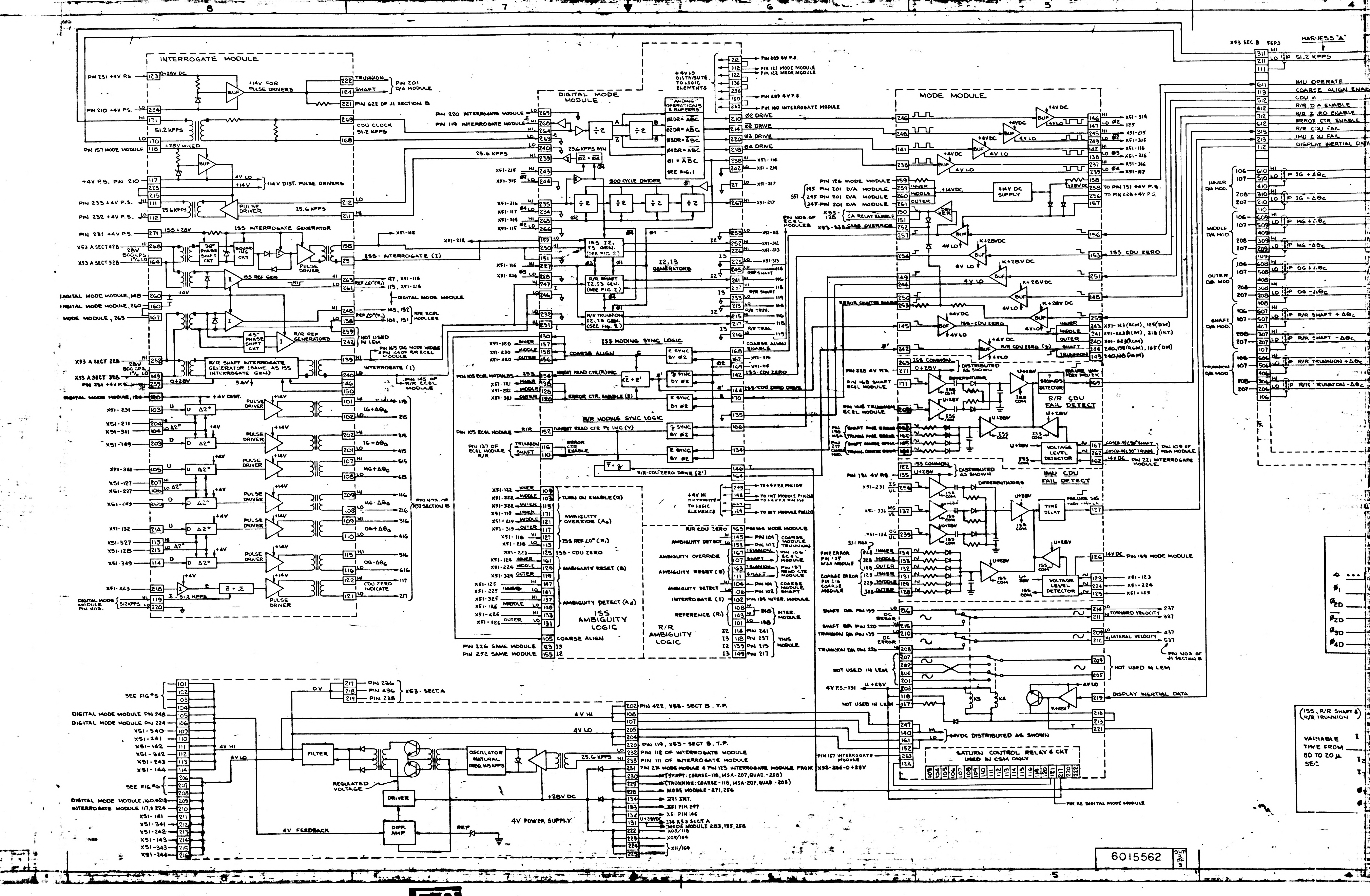


HARNESS "A"
X53 SEC. B
56P3
56P4
J1
51.2 KPPS
IMU OPERATE
COARSE ALIGN ENABLE
CDU Z
R/R D/A ENABLE
R/R ZERO ENABLE
ERROR CTR. ENABLE
R/R CDU FAIL
IMU CDU FAIL
DISPLAY INERTIAL DATA
LGC
SPACE CRAFT
TO S/C LEM ABORT GUIDANCE SYSTEM
TO S/C FDAI (ATTITUDE ERROR METERS)
TO S/C (INERTIAL VELOCITY DISPLAY METERS)
PITCH
ROLL
YAW
FORWARD VELOCITY
LATERAL VELOCITY
INNER D/A MOD.
MIDDLE D/A MOD.
OUTER D/A MOD.
SHAFT D/A MOD.
TRUNNION D/A MOD.
IG + Δθc
IG - Δθc
MG + Δθc
MG - Δθc
OG + Δθc
OG - Δθc
R/R SHAFT + Δθc
R/R SHAFT - Δθc
R/R TRUNNION + Δθc
R/R TRUNNION - Δθc
INNER D/A MODULE
MIDDLE D/A MODULE
OUTER D/A MODULE
SHAFT D/A MODULE
TRUNNION D/A MODULE
INTERROGATE MODULE
X51
MODE MODULE
X53 SPECIAL TEST CONNECTOR
CDU
PITCH ATTITUDE ERROR
ROLL ATTITUDE ERROR
YAW ATTITUDE ERROR
R/R SHAFT AC ERROR
R/R TRUNNION AC ERROR
56P1
SIGNAL CONDITION MODULE
TEST POINT COMMON
IG FINE ERROR
IG COARSE ERROR
MG FINE ERROR
MG COARSE ERROR
OG FINE ERROR
OG COARSE ERROR
SHAFT FINE ERROR
SHAFT COARSE ERROR
TRUNNION FINE ERROR
TRUNNION COARSE ERROR
+4V DC
COUNTER INPUT PULSES
COUNTER UP LEVEL
PIN 130 MSA MODULE
PIN 217 COARSE MODULE
PIN 252 +4V P.S.
PIN NO. 109 ECEL MODULE
PIN NO. 169 ECEL MODULE
IG COS 1X
IG SIN 1X
MG SIN 1X
MG COS 1X
OG SIN 1X
OG COS 1X
SHAFT R/R SIN 1X
SHAFT R/R COS 1X
TRUNNION R/R SIN 1X
TRUNNION R/R COS 1X
USED FOR CDU BLACK BOX TESTING ONLY
IG TERNARY LEVEL
MG TERNARY LEVEL
OG TERNARY LEVEL
SHAFT TERNARY LEVEL
TRUNNION TERNARY LEVEL
AMBIGUITY LEVEL
CLOCK & LOGIC TIMING DIAGRAM
51.2 KPPS
12.8 KPPS
FIGURE - 1
(ISS, R/R SHAFT & R/R TRUNNION) I2, I3 GENERATOR TIMING DIAGRAM
VARIABLE TIME FROM 80 TO 20 μ SEC
1600 PPS, 3μ SEC
12.8K PPS, 3μ SEC
FIGURE - 2
+14V DC SUPPLY
ISS CDU ZERO
R/R CDU FAIL DETECT
IMU CDU FAIL DETECT
VOLTAGE LEVEL DETECTOR
TIME DELAY
FORWARD VELOCITY
LATERAL VELOCITY
NOT USED IN LEM
DISPLAY INERTIAL DATA
PIN NOS. OF J1 SECTION B
PIN 112 DIGITAL MODE MODULE
6015562 SHT 3 OF 3

FLOW DIAGRAM ON SHEET 1 OUTLINES COMPONENT LOCATION & SIGNAL FLOW ON EACH SHEET OF THIS DRAWING.

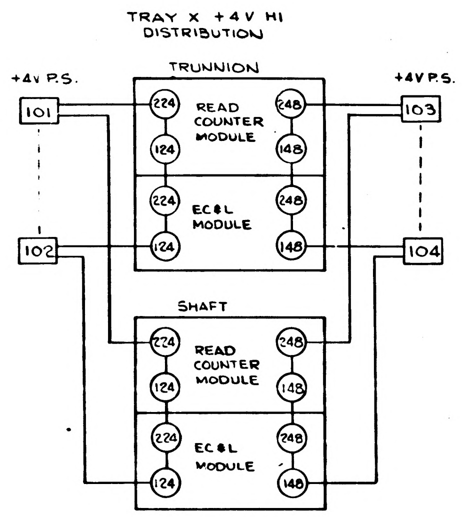
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± — DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DRAWN J. Koss DATE 3-29-65 CHECKED APPROVAL J. Hilaire 6-1-65 APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	LEM 5 AXIS MODING
MATERIAL HEAT TREATMENT FINAL FINISH	NASA APPROVAL MIT APPROVAL	CODE IDENT NO. SIZE SCALE — WT	NASA DRAWING NO. 6015562 SHEET 3 OF 3

NEXT ASSY — USED ON — APPLICATION



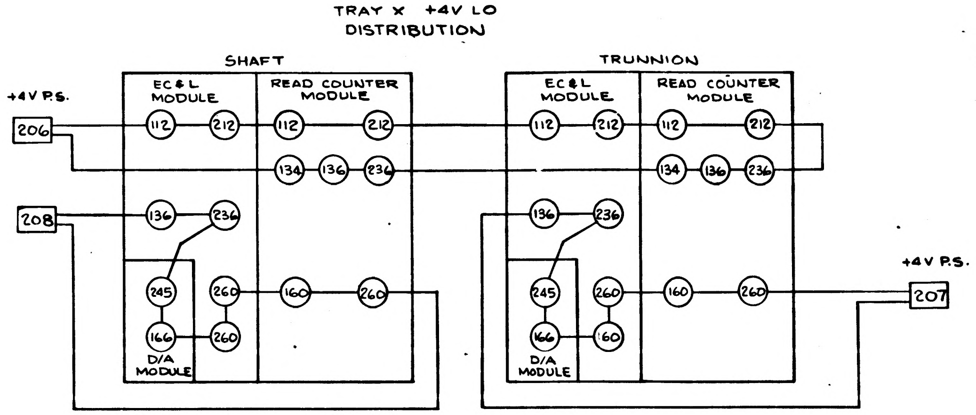
8
7
6
5
4
INTERROGATE MODULE
+14V FOR PULSE DRIVERS
BUF
TRUNNION
SHAFT
PIN 201 D/A MODULE
PIN 622 OF J1 SECTION B
51.2 KPPS
CDU CLOCK 51.2 KPPS
+28V MIXED
+14V DIST. PULSE DRIVERS
PULSE DRIVER
25.6 KPPS
ISS INTERROGATE GENERATOR
90° PHASE SHIFT CKT
SQUARING CKT
ISS - INTERROGATE (I)
ISS REF GEN
45° PHASE SHIFT CKT
R/R REF GENERATORS
NOT USED IN LEM
R/R SHAFT INTERROGATE GENERATOR (SAME AS ISS INTERROGATE GEN)
INTERROGATE (I)
IG+Δθc
IG-Δθc
MG+Δθc
MG-Δθc
OG+Δθc
OG-Δθc
CDU ZERO INDICATE
PIN NOS. OF X53 SECTION B
DIGITAL MODE MODULE
"ANDING" OPERATIONS & BUFFERS
Ø2 DRIVE
Ø3 DRIVE
Ø4 DRIVE
800 CYCLE DIVIDER
ISS I2, I3 GEN. (SEE FIG. 2)
I2, I3 GENERATORS
R/R SHAFT I2, I3 GEN. (SEE FIG. 2)
R/R TRUNNION I2, I3 GEN (SEE FIG. 2)
ISS MODING SYNC LOGIC
COARSE ALIGN
C SYNC BY Ø2
INHIBIT READ CTR (R) INC
ERROR CTR. ENABLE (B)
R/R MODING SYNC LOGIC
R/R-CDU ZERO DRIVE (Z')
TURN ON ENABLE (Q)
AMBIGUITY OVERRIDE (A0)
ISS REF ∠0° (R1)
ISS - CDU ZERO
AMBIGUITY RESET (B)
AMBIGUITY DETECT (Ad)
ISS AMBIGUITY LOGIC
R/R AMBIGUITY LOGIC
+4V HI DISTRIBUTE TO LOGIC ELEMENTS
MODE MODULE
+14V DC SUPPLY
CA RELAY ENABLE
CAGE OVERRIDE
ISS CDU ZERO
ERROR COUNTER ENABLE
ISS-CDU ZERO
R/R CDU ZERO
ISS COMMON
DISTRIBUTED AS SHOWN
DIFFERENTIATOR
7 SECONDS DETECTOR
R/R CDU FAIL DETECT
VOLTAGE LEVEL DETECTOR
IMU CDU FAIL DETECT
TIME DELAY
FAILURE SIG
FORWARD VELOCITY
LATERAL VELOCITY
PIN NOS. OF J1 SECTION B
NOT USED IN LEM
DISPLAY INERTIAL DATA
+4VDC DISTRIBUTED AS SHOWN
SATURN CONTROL RELAY & CKT USED IN CSM ONLY
PIN 112 DIGITAL MODE MODULE
X53 SEC. B 56P3
HARNESS "A"
IP 51.2 KPPS
IMU OPERATE
COARSE ALIGN ENABLE
CDU Z
R/R D A ENABLE
R/R ZERO ENABLE
ERROR CTR ENABLE
R/R CDU FAIL
IMU CDU FAIL
DISPLAY INERTIAL DATA
INNER D/A MOD.
MIDDLE D/A MOD
OUTER D/A MOD.
SHAFT D/A MOD.
TRUNNION D/A MOD
IP IG +Δθc
IP IG -Δθc
IP MG +Δθc
IP MG -Δθc
IP OG +Δθc
IP OG -Δθc
IP R/R SHAFT +Δθc
IP R/R SHAFT -Δθc
IP R/R TRUNNION +Δθc
IP R/R TRUNNION -Δθc
(ISS, R/R SHAFT & R/R TRUNNION)
VARIABLE TIME FROM 80 TO 20 μ SEC
FILTER
REGULATED VOLTAGE
OSCILLATOR NATURAL FREQ 11.5 KPPS
DRIVER
DIFR AMP
4V FEEDBACK
REF
4V POWER SUPPLY
4V HI
4V LO
+28V DC
SEE FIG. 5
SEE FIG. 6
X53-SECT. A
PIN 422, X53 - SECT B, T.P.
PIN 119, X53 - SECT B, T.P.
PIN 112 OF INTERROGATE MODULE
PIN 111 OF INTERROGATE MODULE

6015562



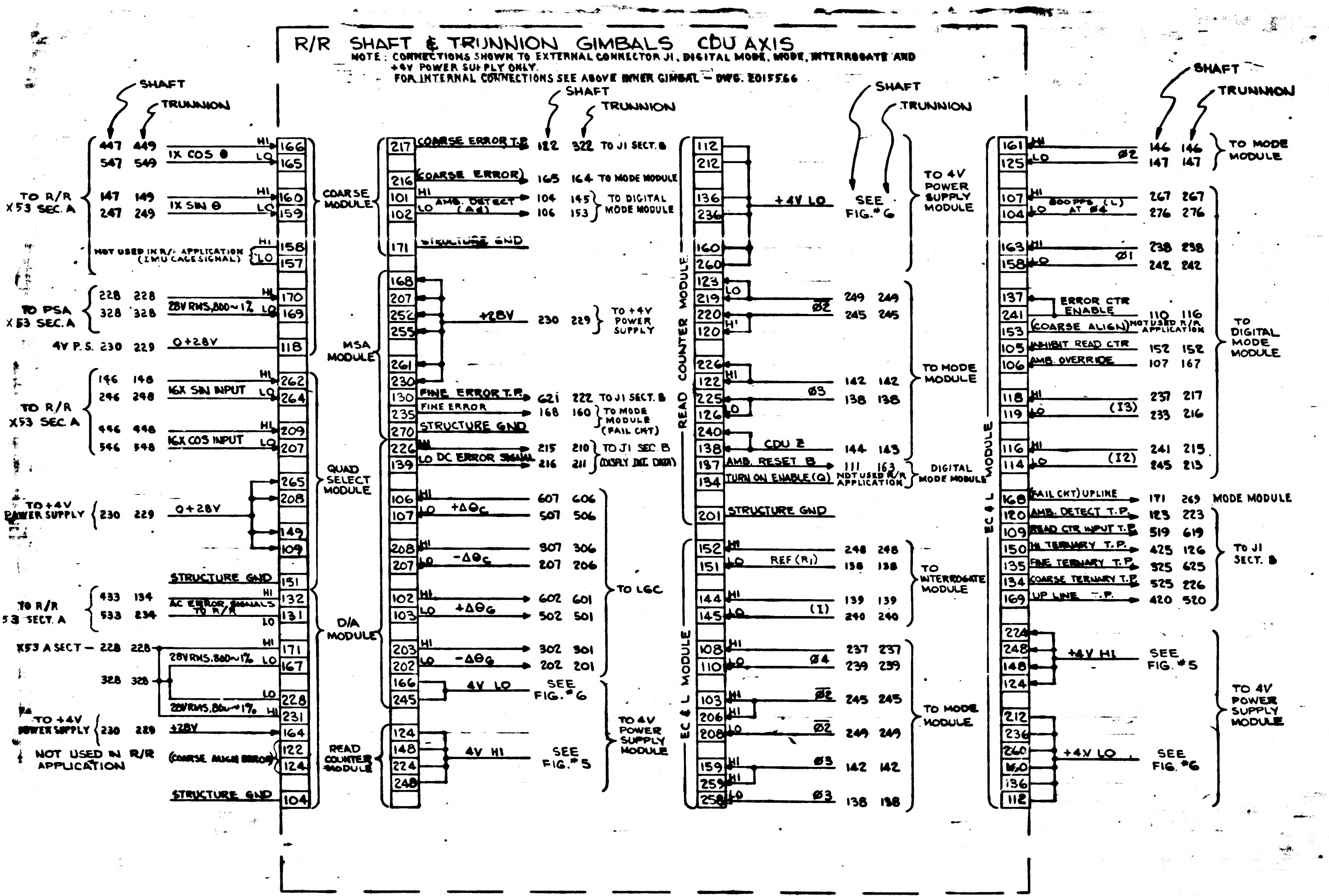
TRAY X +4V HI DISTRIBUTION
TRUNNION
SHAFT
+4V P.S.
101
102
103
104
READ COUNTER MODULE
EC&L MODULE
224
124
248
148

FIGURE #5

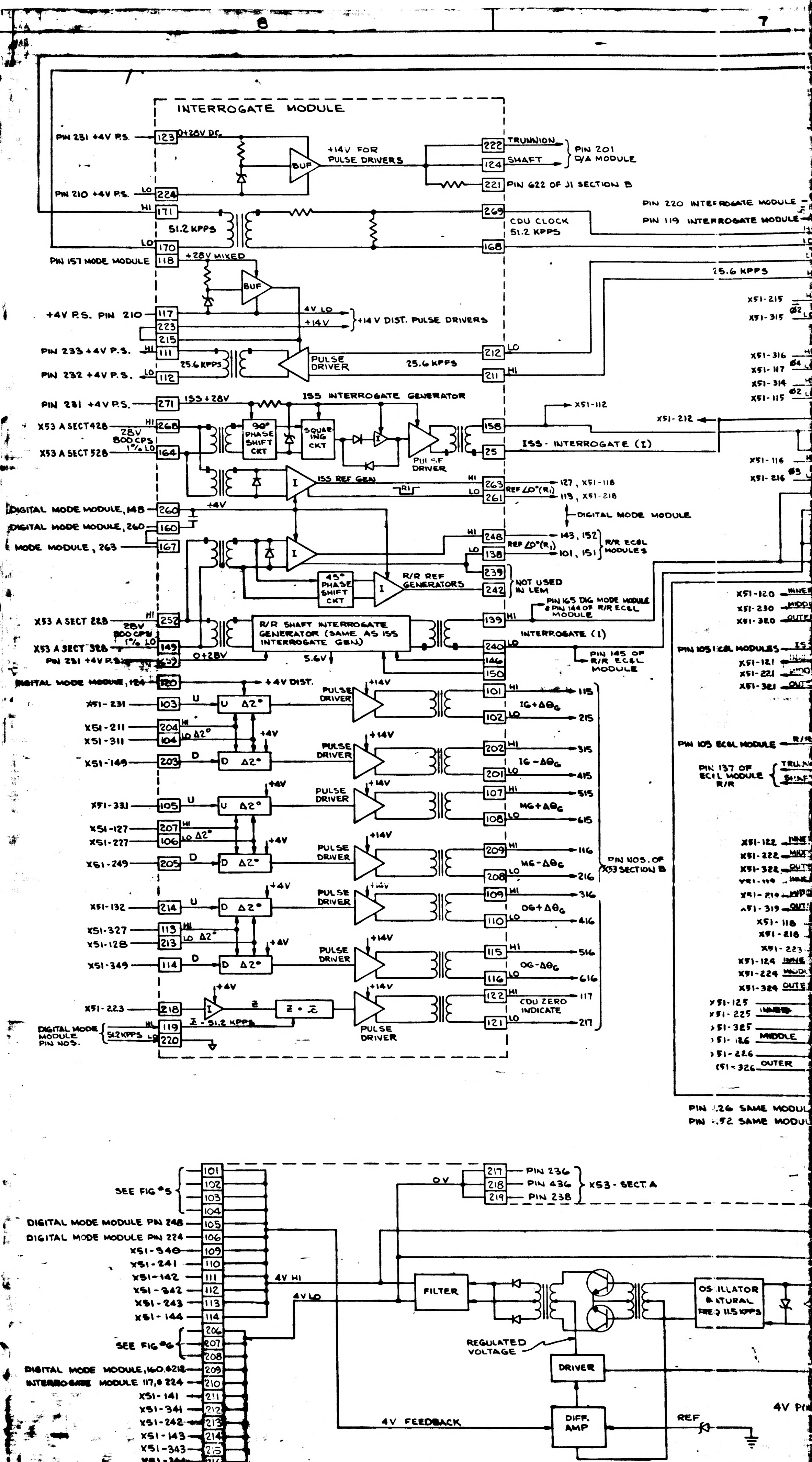


TRAY X +4V LO DISTRIBUTION
SHAFT
TRUNNION
+4V P.S.
206
208
207
EC&L MODULE
READ COUNTER MODULE
D/A MODULE
112
212
134
136
236
245
260
160
166

FIGURE #6

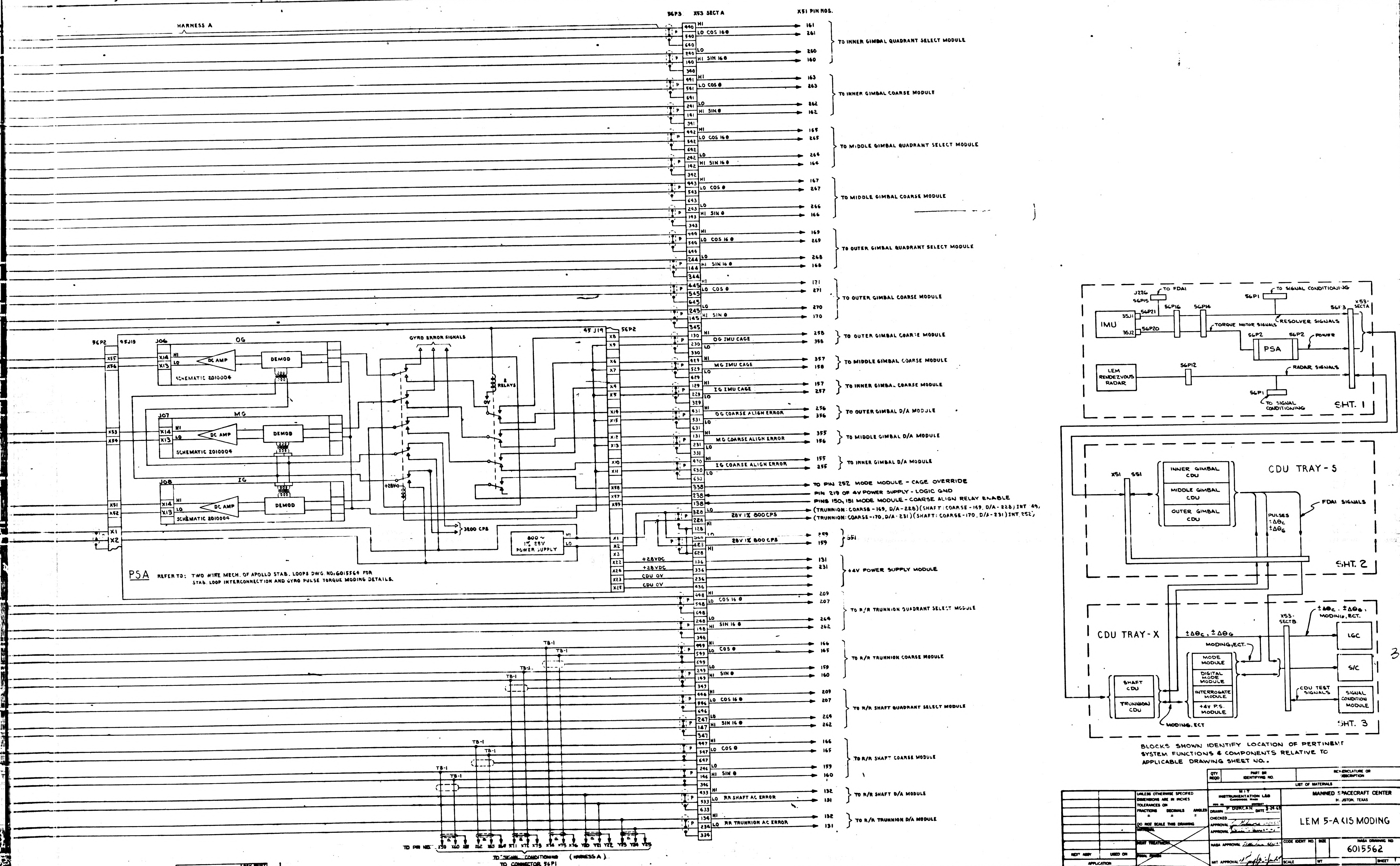


R/R SHAFT & TRUNNION GIMBALS CDU AXIS
NOTE: CONNECTIONS SHOWN TO EXTERNAL CONNECTOR J1, DIGITAL MODE, MODE, INTERROGATE AND +4V POWER SUPPLY ONLY.
FOR INTERNAL CONNECTIONS SEE ABOVE INNER GIMBAL – DWG. 6015566
SHAFT
TRUNNION
TO R/R X53 SEC. A
TO PSA X53 SEC. A
TO +4V POWER SUPPLY
NOT USED IN R/R APPLICATION
COARSE MODULE
MSA MODULE
QUAD SELECT MODULE
D/A MODULE
READ COUNTER MODULE
EC & L MODULE
TO DIGITAL MODE MODULE
TO MODE MODULE
TO LGC
TO J1 SECT. B
TO INTERROGATE MODULE
TO 4V POWER SUPPLY MODULE
SEE FIG. #5
SEE FIG. #6
1X COS θ
1X SIN θ
16X SIN INPUT
16X COS INPUT
28V RMS, 800~1%
0+28V
+28V
COARSE ERROR T.P.
COARSE ERROR
FINE ERROR T.P.
STRUCTURE GND
+ΔθC
−ΔθC
+ΔθG
−ΔθG
4V LO
4V HI
+4V LO
+4V HI
CDU Z
AMB. RESET
REF (R1)
FAIL CKT UPLINE
ERROR CTR ENABLE
COARSE ALIGN
INHIBIT READ CTR
AMB. OVERRIDE



INTERROGATE MODULE
+14V FOR PULSE DRIVERS
BUF
TRUNNION
SHAFT
PIN 201 D/A MODULE
PIN 622 OF J1 SECTION B
CDU CLOCK 51.2 KPPS
51.2 KPPS
25.6 KPPS
+4V DIST. PULSE DRIVERS
PULSE DRIVER
ISS INTERROGATE GENERATOR
90° PHASE SHIFT CKT
SQUARING CKT
PULSE DRIVER
ISS REF GEN
ISS INTERROGATE (I)
DIGITAL MODE MODULE
R/R EC&L MODULES
45° PHASE SHIFT CKT
R/R REF GENERATORS
NOT USED IN LEM
R/R SHAFT INTERROGATE GENERATOR (SAME AS ISS INTERROGATE GEN)
INTERROGATE (I)
+4V DIST.
IG+ΔθG
IG−ΔθG
MG+ΔθG
MG−ΔθG
OG+ΔθG
OG−ΔθG
CDU ZERO INDICATE
PIN NOS. OF X53 SECTION B
DIGITAL MODE MODULE PIN NOS.
SEE FIG #5
SEE FIG #6
X53-SECT. A
4V HI
4V LO
FILTER
OSCILLATOR NATURAL FREQ 115 KPPS
REGULATED VOLTAGE
DRIVER
DIFF. AMP
4V FEEDBACK
REF
PIN 126 SAME MODUL
PIN 152 SAME MODUL

6015562 SHEET 3 OF 3


HARNESS A
56P3
X53 SECT A
X51 PIN NOS.
HI
LO COS 16θ
LO
HI SIN 16θ
161
261
260
160
TO INNER GIMBAL QUADRANT SELECT MODULE
LO COS θ
HI SIN θ
163
263
262
162
TO INNER GIMBAL COARSE MODULE
165
265
264
164
TO MIDDLE GIMBAL QUADRANT SELECT MODULE
167
267
266
166
TO MIDDLE GIMBAL COARSE MODULE
169
269
268
168
TO OUTER GIMBAL QUADRANT SELECT MODULE
171
271
270
170
TO OUTER GIMBAL COARSE MODULE
OG IMU CAGE
258
358
TO OUTER GIMBAL COARSE MODULE
MG IMU CAGE
357
158
TO MIDDLE GIMBAL COARSE MODULE
IG IMU CAGE
157
257
TO INNER GIMBAL COARSE MODULE
OG COARSE ALIGN ERROR
256
356
TO OUTER GIMBAL D/A MODULE
MG COARSE ALIGN ERROR
355
156
TO MIDDLE GIMBAL D/A MODULE
IG COARSE ALIGN ERROR
155
255
TO INNER GIMBAL D/A MODULE
TO PIN 252 MODE MODULE - CAGE OVERRIDE
PIN 219 OF 4V POWER SUPPLY - LOGIC GND
PINS 150, 151 MODE MODULE - COARSE ALIGN RELAY ENABLE
(TRUNNION: COARSE - 169, D/A - 228)(SHAFT: COARSE - 169, D/A - 228) INT 49,
(TRUNNION: COARSE - 170, D/A - 231)(SHAFT: COARSE - 170, D/A - 231) INT 252,
28V 1% 800CPS
259
159
SS1
28V 1% 800 CPS
131
231
+4V POWER SUPPLY MODULE
COS 16θ
SIN 16θ
209
207
264
262
TO R/R TRUNNION QUADRANT SELECT MODULE
COS θ
SIN θ
166
165
159
160
TO R/R TRUNNION COARSE MODULE
209
207
269
262
TO R/R SHAFT QUADRANT SELECT MODULE
166
165
159
160
TO R/R SHAFT COARSE MODULE
RR SHAFT AC ERROR
132
131
TO R/R SHAFT D/A MODULE
RR TRUNNION AC ERROR
132
131
TO R/R TRUNNION D/A MODULE
56P2
45J19
J06
OG
DC AMP
DEMOD
SCHEMATIC 2010004
J07
MG
J08
IG
X55
X56
X53
X54
X51
X52
X1
X2
X14
X13
GYRO ERROR SIGNALS
2 RELAYS
0V
+28VG
3200 CPS
800 ~ 1% 28V POWER SUPPLY
45 J19
X8
X9
X6
X7
X4
X5
X14
X15
X12
X13
X10
X11
X58
X57
X59
X1
X2
X3
X22
X24
X23
X25
+28VDC
+28VDC
CDU 0V
CDU 0V
PSA
REFER TO: TWO WIRE MECH. OF APOLLO STAB. LOOPS DWG NO. 6015564 FOR STAB. LOOP INTERCONNECTION AND GYRO PULSE TORQUE MODING DETAILS.
TB-1
TO PIN NO. X39 X40 X61 X62 X63 X64 X71 X72 X73 X74 X75 X76 Y80 Y81 Y82 Y83 Y84 Y85
TO SIGNAL CONDITIONING (HARNESS A)
TO CONNECTOR 56P1
J226
56P15
TO FDAI
56P1
TO SIGNAL CONDITIONING
IMU
35J1
35J2
56P21
56P20
56P16
56P14
TORQUE MOTOR SIGNALS
RESOLVER SIGNALS
56P3
X53-SECTA
56P2
PSA
56P2
POWER
LEM RENDEZVOUS RADAR
56P12
RADAR SIGNALS
56P1
TO SIGNAL CONDITIONING
SHT. 1
X51
SS1
INNER GIMBAL CDU
MIDDLE GIMBAL CDU
OUTER GIMBAL CDU
CDU TRAY - S
FDAI SIGNALS
PULSES ±Δθc ±Δθg
SHT. 2
CDU TRAY - X
±Δθc, ±Δθg
MODING, ECT.
X53-SECTB
±Δθc, ±Δθg, MODING, ECT.
LGC
S/C
MODE MODULE
DIGITAL MODE MODULE
INTERROGATE MODULE
+4V P.S. MODULE
CDU TEST SIGNALS
SIGNAL CONDITION MODULE
SHAFT CDU
TRUNNION CDU
MODING, ECT
SHT. 3
5
4
3
2
1
3

BLOCKS SHOWN IDENTIFY LOCATION OF PERTINENT SYSTEM FUNCTIONS & COMPONENTS RELATIVE TO APPLICABLE DRAWING SHEET NO..

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
LIST OF MATERIALS		

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
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INSTRUMENTATION LAB
CAMBRIDGE, MASS
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APPROVAL
APPROVAL
NASA APPROVAL
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

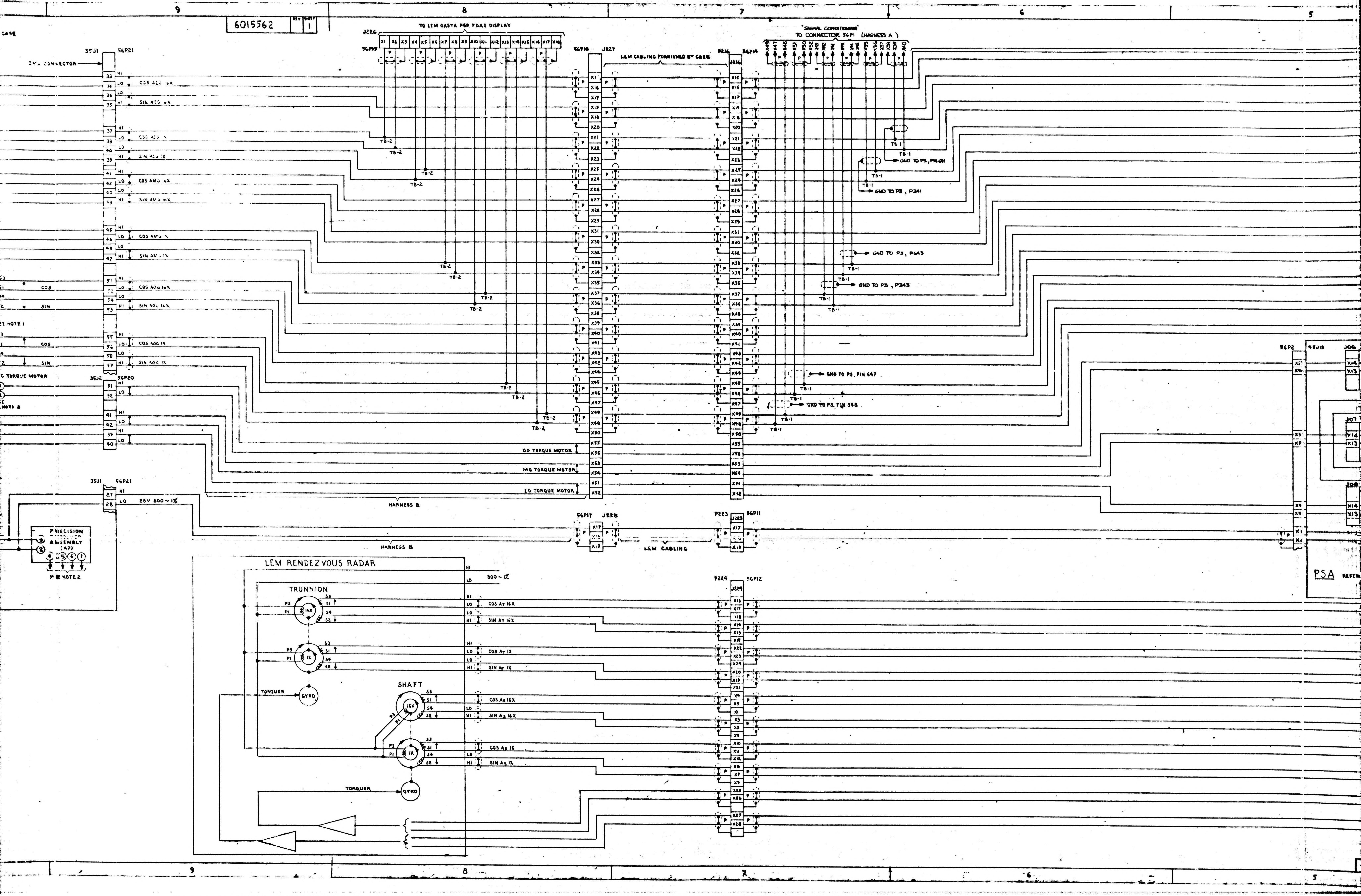
LEM 5-AXIS MODING

CODE IDENT NO. | SIZE | NASA DRAWING NO. 6015562
SCALE | WT | SHEET 1

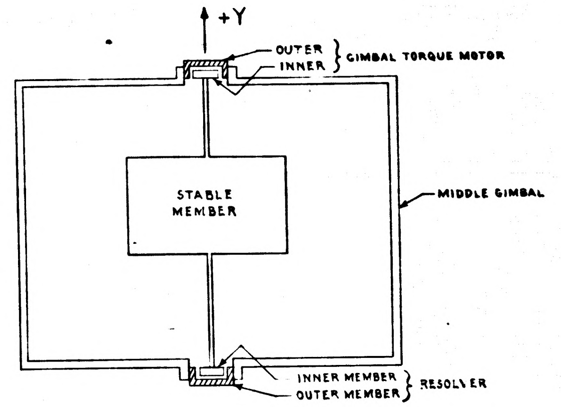
6015562 | REV | SHEET 1

JERRY GILMORE

6015562 REV SHEET 1

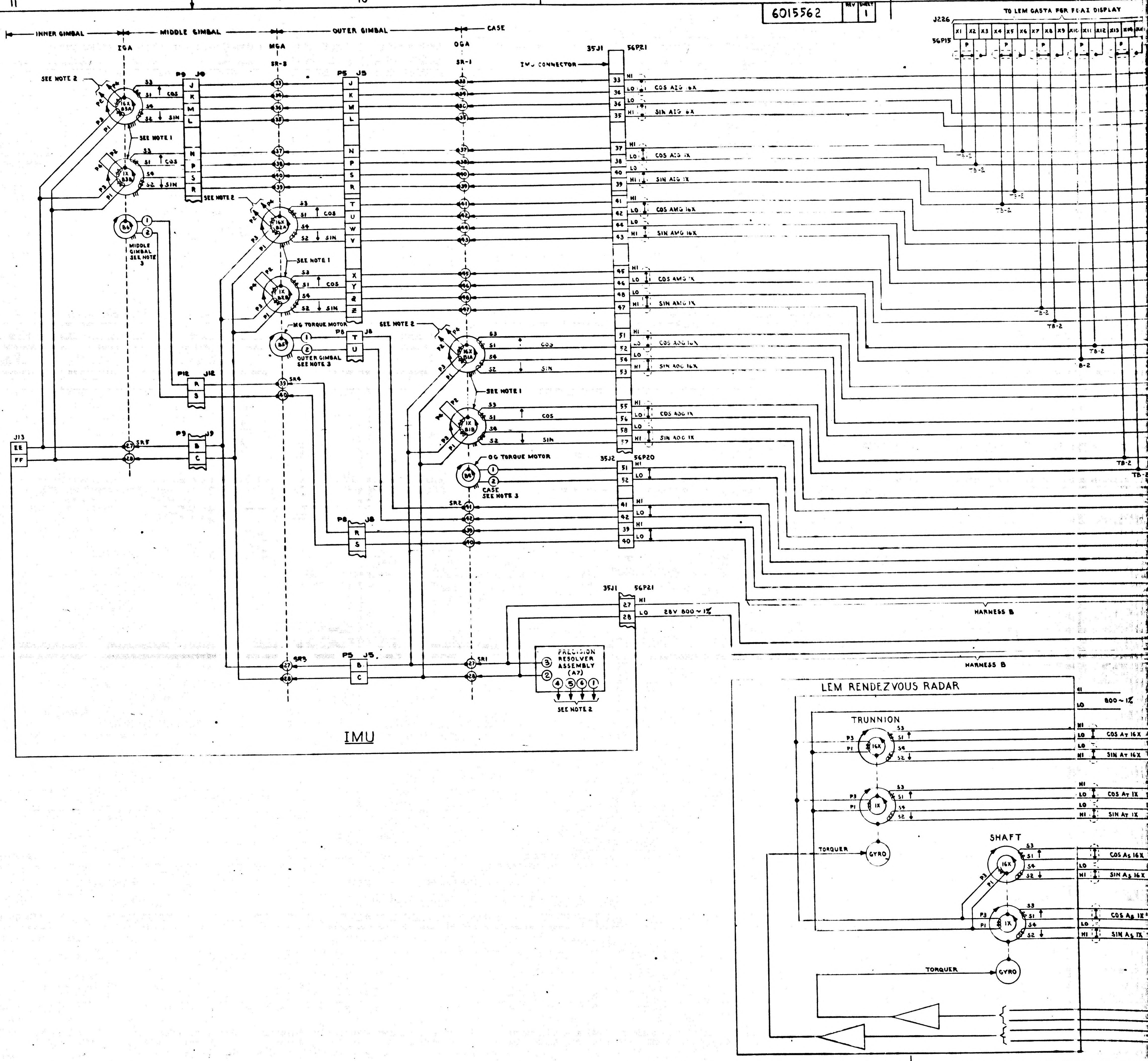

9
8
7
6
5
CASE
35J1
56P21
IMU CONNECTOR
33 HI
34 LO COS AIG 16X
36 LO
35 HI SIN AIG 16X
37 HI
38 LO COS AIG 1X
40 LO
39 HI SIN AIG 1X
41 HI
42 LO COS AMG 16X
44 LO
43 HI SIN AMG 16X
45 HI
46 LO COS AMG 1X
48 LO
47 HI SIN AMG 1X
51 HI
52 LO COS AOG 16X
54 LO
53 HI SIN AOG 16X
55 HI
56 LO COS AOG 1X
58 LO
57 HI SIN AOG 1X
COS
SIN
SEE NOTE 1
G TORQUE MOTOR
SEE NOTE 3
35J2
56P20
51 HI
52 LO
41 HI
42 LO
39 HI
40 LO
27 HI
28 LO 28V 800 ~ 1%
PRECISION RESOLVER ASSEMBLY (A7)
SEE NOTE 2
J226
TO LEM GASTA FOR FDAI DISPLAY
X1 X2 X3 X4 X5 X6 X7 X8 X9 X10 X11 X12 X13 X14 X15 X16 X17 X18
56P15
P
TB-2
56P16
J227
LEM CABLING FURNISHED BY GAEC
P216
56P14
J216
X1 X16 X17 X19 X18 X20 X21 X22 X23 X25 X24 X26 X27 X28 X29 X31 X30 X32 X33 X34 X35 X37 X36 X38 X39 X40 X41 X43 X42 X44 X45 X46 X47 X49 X48 X50 X55 X56 X53 X54 X51 X52
OG TORQUE MOTOR
MG TORQUE MOTOR
IG TORQUE MOTOR
HARNESS B
"SIGNAL CONDITIONING" TO CONNECTOR 56P1 (HARNESS A)
X49 X47 X48 X51 X50 X52 X43 X42 X41 X45 X44 X46 X35 X36 X37 X39 X38 X40
TB-1
GND TO P3, PIN 641
GND TO P3, P341
GND TO P3, P643
GND TO P3, P343
GND TO P3, PIN 647
GND TO P3, PIN 348
56P17
J228
P223
J223
56P11
X17 X18 X19
LEM CABLING
HARNESS B
56P2
45J19
J06
J07
J08
X14 X13
X1
PSA REFER
LEM RENDEZVOUS RADAR
HI
LO 800 ~ 1%
TRUNNION
16X
1X
P3 P1
S3 S1 S4 S2
COS AT 16X
SIN AT 16X
COS AT 1X
SIN AT 1X
TORQUER
GYRO
SHAFT
COS AS 16X
SIN AS 16X
COS AS 1X
SIN AS 1X
P224
J224
56P12
X16 X17 X18 X14 X13 X15 X22 X23 X24 X20 X19 X21 X4 X5 X1 X3 X2 X9 X10 X11 X12 X6 X7 X9 X25 X26 X27 X28

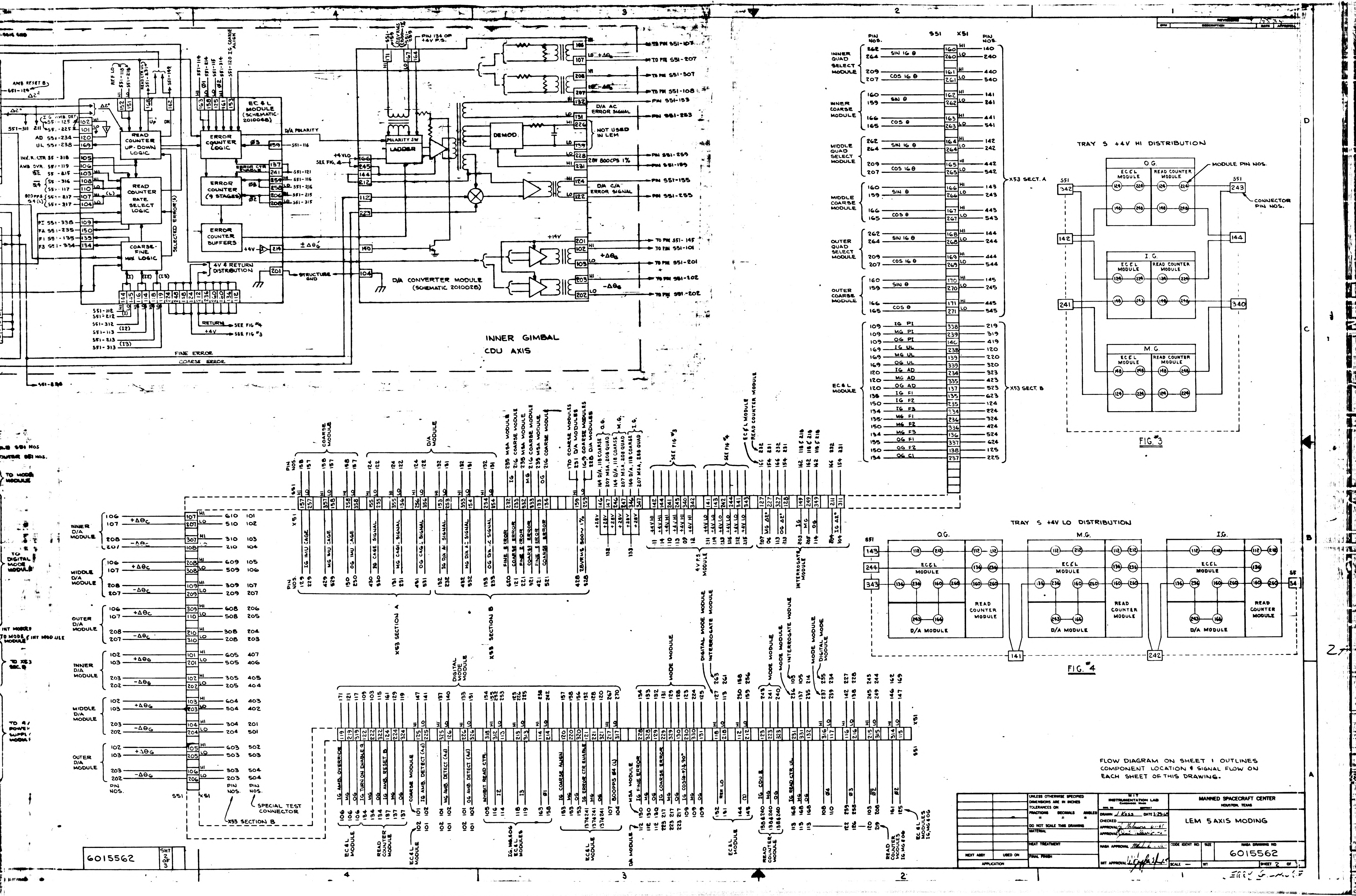
RESOLVER PHASING
VIEW I
(TYPICAL)


+Y
OUTER
INNER
GIMBAL TORQUE MOTOR
STABLE MEMBER
MIDDLE GIMBAL
INNER MEMBER
OUTER MEMBER
RESOLVER

PHASING NOTES:

1. a. FOR EACH GIMBAL AXIS THE RESOLVER INNER MEMBER IS FIXED TO THE INNERMOST GIMBAL MEMBER (SEE VIEW I) AND OUTER MEMBER IS FIXED TO THE OUTER MOST GIMBAL MEMBER.
   b. FOR EACH GIMBAL THE RESOLVER AND MOTOR ASSEMBLYS ARE LOCATED AT THE NEGATIVE AND POSITIVE ENDS OF THE GIMBAL RESPECTIVELY
   c. IMU S/C INSTALLATION IN BLOCK II IS SUCH THAT THE IMU AXES, THE ZEROED GIMBAL AXES AND THE S/C AXES ARE ALIGNED.
   d. POSITIVE ANGLES ARE DEFINED ONE AXIS AT A TIME MEASURED FROM AN IMU ZERO GIMBAL POSITION.
   e. FOR INERTIALLY STABILIZED OPERATION, IMU GIMBALS INITIALLY ORTHOGONAL AND AT ZERO, CLOCKWISE ROTATION OF THE SPACECRAFT WHEN VIEWED OUT ALONG THE POSITIVE GIMBAL AXIS IS DEFINED AS POSITIVE ROTATION AND RESULTS IN POSITIVE GIMBAL ROTATION
   f. THUS (PER "e" ABOVE), RELATIVE GIMBAL MOTION FOR A POSITIVE ROTATION WHEN VIEWED ALONG THE POSITIVE AXIS IS: (SEE VIEW I)
      (1) INERTIAL: CLOCKWISE ROTATION OF THE MIDDLE GIMBAL WITH RESPECT TO THE STABLE MEMBER,
      CLOCKWISE ROTATION OF THE OUTER GIMBAL WITH RESPECT TO THE MIDDLE GIMBAL, ETC.
      (2) COARSE ALIGNMENT: COUNTER CLOCKWISE ROTATION OF THE STABLE MEMBER WITH RESPECT TO THE MIDDLE GIMBAL,
      COUNTER CLOCKWISE ROTATION OF THE MIDDLE GIMBAL WITH RESPECT TO THE OUTER GIMBAL, ETC.
   g. POSITIVE ROTATION OF THE INNER RESOLVER AND OUTER RESOLVER MEMBERS (RELATIVE TO EACH OTHER AND IN ACCORDANCE WITH "F" ABOVE) IS SHOWN ON THE SCHEMATIC.
   h. POSITIVE ROTATION FROM THE ZERO GIMBAL POSITION IN THE FIRST QUADRANT OF ELECTRICAL DEGREES RESULTS IN AN INCREASING IN PHASE OUTER MEMBER SINE WINDING VOLTAGE AND DECREASING OUTER MEMBER COSINE WINDING VOLTAGE.
   i. IN PHASE VOLTAGE IS DEFINED WITH RESPECT TO THE REFERENCE 28V 800 c/ps 1% EXCITATION. P3 IS THE HIGH ON ALL RESOLVER INNER MEMBERS. THE REFERENCE ARROWS BETWEEN THE OUTER MEMBER WINDINGS (S_2 ↑ S_4) IDENTIFY THE IN PHASE RELATIONSHIP FOR GIMBAL ANGLES FROM −90° TO 90° ELECTRICAL COS WINDING, 0° TO 180° ELECTRICAL SINE WINDING.
2. ZERO BIAS ADJUSTMENT WINDINGS CONNECTED TO PRECISION RESOLVER ASSEMBLY. ADJUSTMENT MADE IN PRECISION RESOLVER ASSEMBLY TO SET ELECTRICAL NULL OF COINCIDENT 16X RESOLVER TO COINCIDE WITH ZERO GIMBAL ANGLES (REFERENCE E-1230). SEE IMU WIRING DIAGRAM 2018615 FOR INTERCONNECTION DETAILS.
3. a. THE GIMBAL TORQUE MOTOR ROTOR IS FIXED TO THE INNER GIMBAL MEMBER (SEE VIEW I).
   b. POSITIVE ROTATION IS DEFINED AS IN NOTE "1" ABOVE AND SHOWN BY REFERENCE ARROWS ON THE MOTOR.
   c. A POSITIVE DC VOLTAGE APPLIED AT PIN 1 WITH RESPECT TO PIN 2 OF EACH MOTOR WILL RESULT IN POSITIVE GIMBAL ROTATION.


6015562
REV
SHEET 1
INNER GIMBAL
MIDDLE GIMBAL
OUTER GIMBAL
CASE
IGA
MGA
OGA
SR-3
SR-1
IMU CONNECTOR
35J1
56P21
TO LEM GASTA FOR FDAI DISPLAY
J226
56P15
SEE NOTE 1
SEE NOTE 2
COS AIG 16X
SIN AIG 16X
COS AIG 1X
SIN AIG 1X
COS AMG 16X
SIN AMG 16X
COS AMG 1X
SIN AMG 1X
COS AOG 16X
SIN AOG 16X
COS AOG 1X
SIN AOG 1X
MIDDLE GIMBAL SEE NOTE 3
MG TORQUE MOTOR
OUTER GIMBAL SEE NOTE 3
OG TORQUE MOTOR
CASE SEE NOTE 3
35J2
56P20
J13
EE
FF
28V 800 ~ 1%
PRECISION RESOLVER ASSEMBLY (A7)
SEE NOTE 2
HARNESS B
IMU
LEM RENDEZVOUS RADAR
800 ~ 1%
TRUNNION
COS AT 16X
SIN AT 16X
COS AT 1X
SIN AT 1X
TORQUER
GYRO
SHAFT
COS AS 16X
SIN AS 16X
COS AS 1X
SIN AS 1X



INNER GIMBAL
CDU AXIS
EC & L MODULE (SCHEMATIC 2010048)
READ COUNTER UP-DOWN LOGIC
READ COUNTER RATE SELECT LOGIC
COARSE-FINE MUX LOGIC
ERROR COUNTER LOGIC
ERROR COUNTER (9 STAGES)
ERROR COUNTER BUFFERS
4V & RETURN DISTRIBUTION
D/A POLARITY
POLARITY SW
LADDER
DEMOD
D/A CONVERTER MODULE (SCHEMATIC 2010028)
D/A AC ERROR SIGNAL
NOT USED IN LEM
28V 800CPS 1%
D/A C/A ERROR SIGNAL
STRUCTURE GND
FINE ERROR
COARSE ERROR
SELECTED ERROR
RETURN SEE FIG #4
+4V SEE FIG #3
PIN 134 OF +4V P.S.
SEE FIG. 4
INNER QUAD SELECT MODULE
INNER COARSE MODULE
MIDDLE QUAD SELECT MODULE
MIDDLE COARSE MODULE
OUTER QUAD SELECT MODULE
OUTER COARSE MODULE
EC & L MODULE
X53 SECT. A
X53 SECT. B
PIN NOS.
S51
X51
TRAY 5 +4V HI DISTRIBUTION
O.G.
I.G.
M.G.
EC & L MODULE
READ COUNTER MODULE
MODULE PIN NOS.
CONNECTOR PIN NOS.
FIG. #3
TRAY 5 +4V LO DISTRIBUTION
D/A MODULE
FIG. #4
INNER D/A MODULE
MIDDLE D/A MODULE
OUTER D/A MODULE
X53 SECTION A
X53 SECTION B
SPECIAL TEST CONNECTOR
COARSE MODULE
D/A MODULE
DIGITAL MODE MODULE
INTERROGATE MODULE
MODE MODULE
4V P.S. MODULE
READ COUNTER MODULES
IG, MG, & OG EC & L MODULES

FLOW DIAGRAM ON SHEET 1 OUTLINES COMPONENT LOCATION & SIGNAL FLOW ON EACH SHEET OF THIS DRAWING.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	M I T INSTRUMENTATION LAB CAMBRIDGE, MASS
DO NOT SCALE THIS DRAWING	DRAWN J Koss DATE 3-24-65
MATERIAL	CHECKED
HEAT TREATMENT	NASA APPROVAL
FINAL FINISH	MIT APPROVAL
NEXT ASSY / USED ON / APPLICATION	

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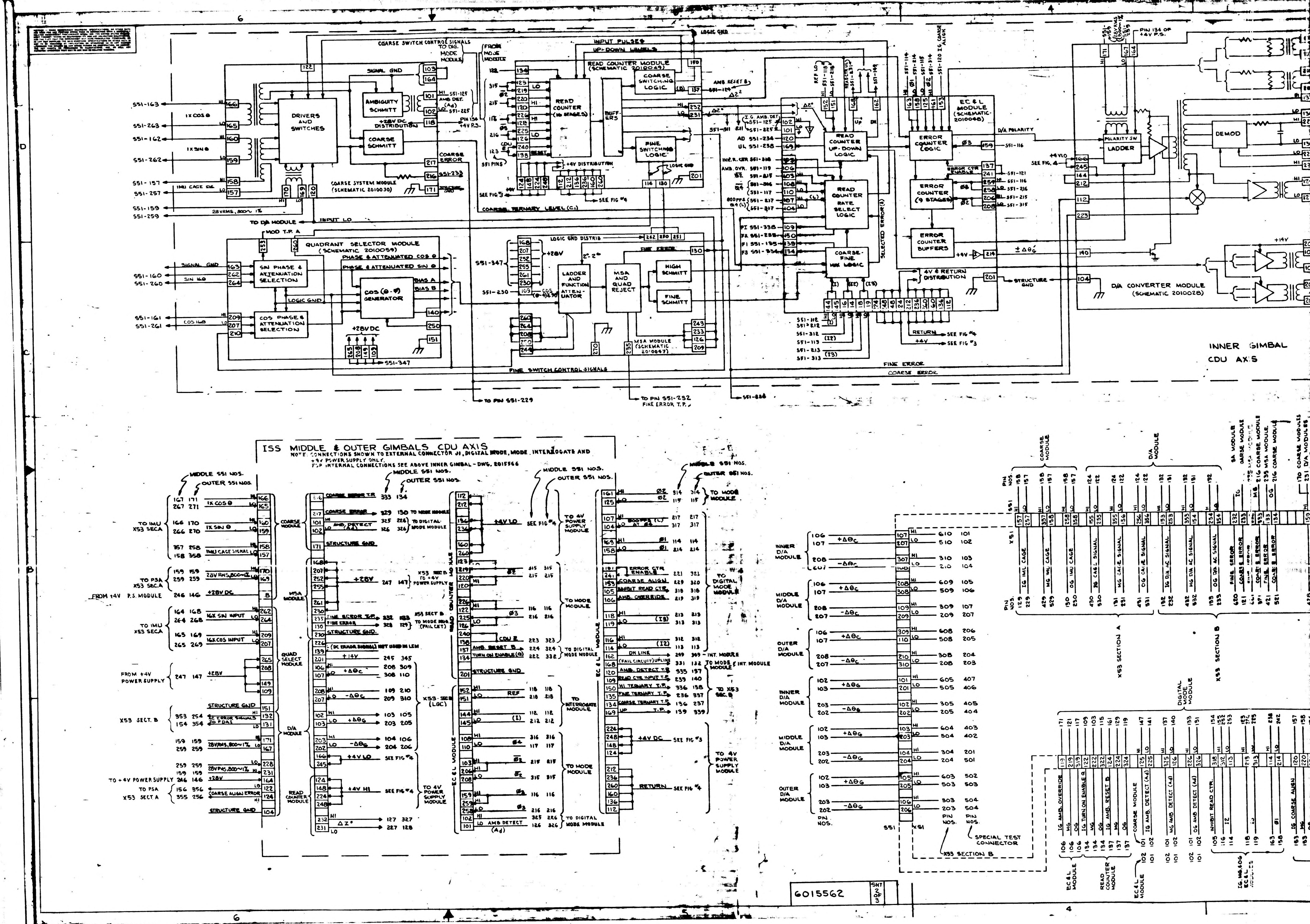
LEM 5 AXIS MODING

NASA DRAWING NO 6015562

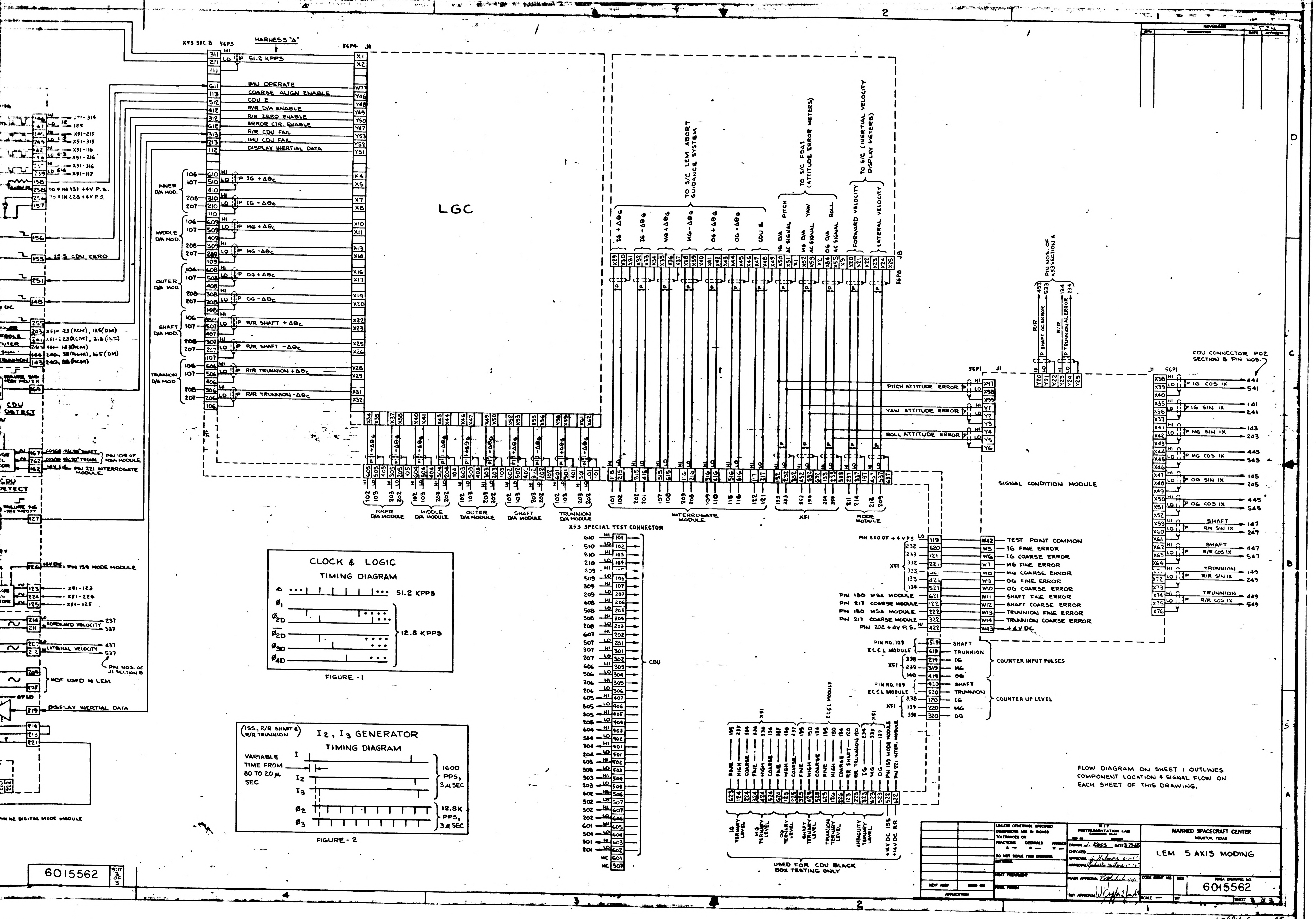
SHEET 2

6015562 SHT 2 OF


INNER GIMBAL
CDU AXIS
COARSE SYSTEM MODULE (SCHEMATIC 2010030)
DRIVERS AND SWITCHES
AMBIGUITY SCHMITT
COARSE SCHMITT
READ COUNTER MODULE (SCHEMATIC 2010049)
READ COUNTER (16 STAGES)
BUFFERS
COARSE SWITCHING LOGIC
FINE SWITCHING LOGIC
INPUT PULSES
UP-DOWN LEVELS
COARSE SWITCH CONTROL SIGNALS TO DIG. MODE MODULE
QUADRANT SELECTOR MODULE (SCHEMATIC 2010059)
SIN PHASE & ATTENUATION SELECTION
COS (θ-ψ) GENERATOR
COS PHASE & ATTENUATION SELECTION
LADDER AND FUNCTION ATTENUATOR
MSA AND QUAD REJECT
HIGH SCHMITT
FINE SCHMITT
MSA MODULE (SCHEMATIC 2010067)
FINE SWITCH CONTROL SIGNALS
READ COUNTER UP-DOWN LOGIC
READ COUNTER RATE SELECT LOGIC
COARSE-FINE MIX LOGIC
EC & L MODULE (SCHEMATIC 2010048)
ERROR COUNTER LOGIC
ERROR COUNTER (9 STAGES)
ERROR COUNTER BUFFERS
SELECTED ERROR
POLARITY SW
LADDER
DEMOD
D/A CONVERTER MODULE (SCHEMATIC 2010028)
FINE ERROR
COARSE ERROR
TO PIN 551-229
TO PIN 551-232 FINE ERROR T.P.
ISS MIDDLE & OUTER GIMBALS CDU AXIS
NOTE: CONNECTIONS SHOWN TO EXTERNAL CONNECTOR J1, DIGITAL MODE, MODE, INTERROGATE AND +4V POWER SUPPLY ONLY. FOR INTERNAL CONNECTIONS SEE ABOVE INNER GIMBAL - DWG. 2015566
MIDDLE 551 NOS.
OUTER 551 NOS.
COARSE MODULE
MSA MODULE
QUAD SELECT MODULE
D/A MODULE
READ COUNTER MODULE
EC & L MODULE
TO 4V POWER SUPPLY MODULE
TO MODE MODULE
TO DIGITAL MODE MODULE
TO INTERROGATE MODULE
X53 SECTION A
X53 SECTION B
SPECIAL TEST CONNECTOR
INNER D/A MODULE
MIDDLE D/A MODULE
OUTER D/A MODULE
COARSE MODULE
D/A MODULE
DIGITAL MODE MODULE
EC & L MODULE
READ COUNTER MODULE
6
5
4
D
C
B

6015562

SHT 2 OF


HARNESS "A"
X53 SEC. B
56P3
56P4 J1
51.2 KPPS
IMU OPERATE
COARSE ALIGN ENABLE
CDU Z
R/R D/A ENABLE
R/R ZERO ENABLE
ERROR CTR. ENABLE
R/R CDU FAIL
IMU CDU FAIL
DISPLAY INERTIAL DATA
INNER D/A MOD.
IG + Δθc
IG − Δθc
MIDDLE D/A MOD.
MG + Δθc
MG − Δθc
OUTER D/A MOD.
OG + Δθc
OG − Δθc
SHAFT D/A MOD.
R/R SHAFT + Δθc
R/R SHAFT − Δθc
TRUNNION D/A MOD
R/R TRUNNION + Δθc
R/R TRUNNION − Δθc
LGC
TO S/C LEM ABORT GUIDANCE SYSTEM
TO S/C FDAI (ATTITUDE ERROR METERS)
TO S/C (INERTIAL VELOCITY DISPLAY METERS)
IG + Δθc
IG − Δθc
MG + Δθc
MG − Δθc
OG + Δθc
OG − Δθc
CDU Z
IG D/A AC SIGNAL PITCH
MG D/A AC SIGNAL YAW
OG D/A AC SIGNAL ROLL
FORWARD VELOCITY
LATERAL VELOCITY
J8
56P8
INNER D/A MODULE
MIDDLE D/A MODULE
OUTER D/A MODULE
SHAFT D/A MODULE
TRUNNION D/A MODULE
INTERROGATE MODULE
X51
MODE MODULE
PITCH ATTITUDE ERROR
YAW ATTITUDE ERROR
ROLL ATTITUDE ERROR
56P1 J1
PIN NOS. OF X53 SECTION A
R/R SHAFT AC ERROR
R/R TRUNNION AC ERROR
SIGNAL CONDITION MODULE
CDU CONNECTOR P02 SECTION B PIN NOS.
J1 56P1
IG COS 1X
IG SIN 1X
MG SIN 1X
MG COS 1X
OG SIN 1X
OG COS 1X
SHAFT R/R SIN 1X
SHAFT R/R COS 1X
TRUNNION R/R SIN 1X
TRUNNION R/R COS 1X
X53 SPECIAL TEST CONNECTOR
CDU
PIN 220 OF +4 VPS
TEST POINT COMMON
IG FINE ERROR
IG COARSE ERROR
MG FINE ERROR
MG COARSE ERROR
OG FINE ERROR
OG COARSE ERROR
SHAFT FINE ERROR
SHAFT COARSE ERROR
TRUNNION FINE ERROR
TRUNNION COARSE ERROR
+4 V DC
PIN 130 MSA MODULE
PIN 217 COARSE MODULE
PIN 202 +4 V P.S.
PIN NO. 109 ECCI MODULE
SHAFT
TRUNNION
IG
MG
OG
COUNTER INPUT PULSES
PIN NO. 169 ECCI MODULE
COUNTER UP LEVEL
IG TERNARY LEVEL
MG TERNARY LEVEL
OG TERNARY LEVEL
SHAFT TERNARY LEVEL
TRUNNION TERNARY LEVEL
AMBIGUITY TERNARY LEVEL
+14 V DC ISS
+14 V DC RR
USED FOR CDU BLACK BOX TESTING ONLY
CLOCK & LOGIC TIMING DIAGRAM
51.2 KPPS
12.8 KPPS
ϕ_1
ϕ_{2D}
$\bar{\phi}_{2D}$
ϕ_{3D}
ϕ_{4D}
FIGURE -1
(ISS, R/R SHAFT & R/R TRUNNION)
I_2, I_3 GENERATOR TIMING DIAGRAM
VARIABLE TIME FROM 80 TO 20 μ SEC
I
I_2
I_3
ϕ_2
ϕ_3
1600 PPS, 3 μ SEC
12.8K PPS, 3 μ SEC
FIGURE - 2
I²S CDU ZERO
FORWARD VELOCITY
LATERAL VELOCITY
PIN NOS. OF J1 SECTION B
NOT USED IN LEM
DISPLAY INERTIAL DATA
PIN 159 MODE MODULE
PIN 109 OF MSA MODULE
PIN 221 INTERROGATE MODULE
CDU DETECT
6015562
SHT 3 OF 3
D
C
B
A
1
2
3
4

FLOW DIAGRAM ON SHEET 1 OUTLINES COMPONENT LOCATION & SIGNAL FLOW ON EACH SHEET OF THIS DRAWING.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH
NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN J. Koss DATE 3-29-65
CHECKED
APPROVAL J. Gilmore 6-1-65
APPROVAL
NASA APPROVAL
MIT APPROVAL

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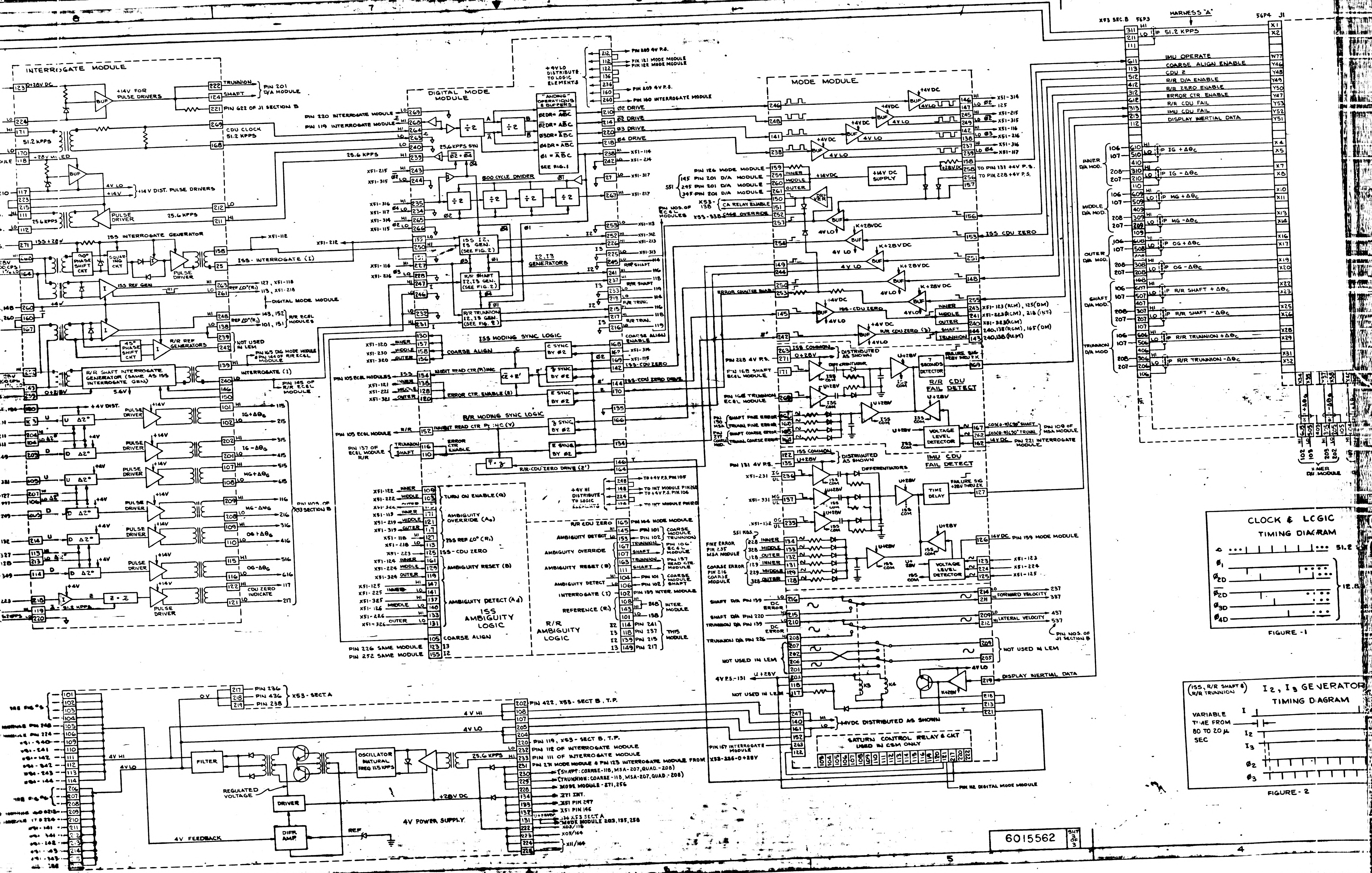
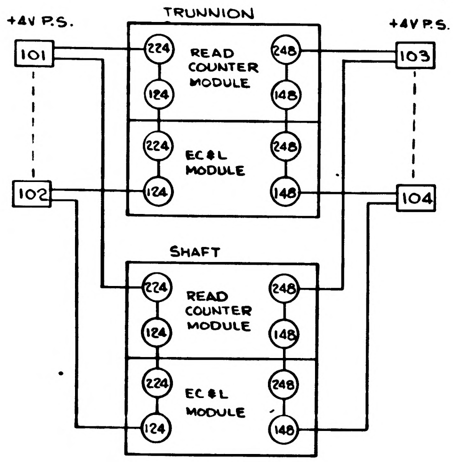
LEM 5 AXIS MODING

CODE IDENT NO. | SIZE | NASA DRAWING NO. 6015562
SCALE — | WT | SHEET 3 OF 3

JERRY GILMORE


INTERROGATE MODULE
DIGITAL MODE MODULE
MODE MODULE
"ANDING" OPERATIONS & BUFFERS
800 CYCLE DIVIDER
ISS INTERROGATE GENERATOR
R/R SHAFT INTERROGATE GENERATOR (SAME AS ISS INTERROGATE GEN)
ISS I2, I3 GEN. (SEE FIG. 2)
R/R SHAFT I2, I3 GEN. (SEE FIG. 2)
R/R TRUNNION I2, I3 GEN. (SEE FIG. 2)
I2, I3 GENERATORS
ISS MODING SYNC LOGIC
R/R MODING SYNC LOGIC
ISS AMBIGUITY LOGIC
R/R AMBIGUITY LOGIC
R/R CDU FAIL DETECT
IMU CDU FAIL DETECT
VOLTAGE LEVEL DETECTOR
TIME DELAY
+14V DC SUPPLY
CDU CLOCK 51.2 KPPS
25.6 KPPS
PULSE DRIVER
4V POWER SUPPLY
FILTER
OSCILLATOR NATURAL FREQ 11.5 KPPS
DRIVER
DIFF AMP
REGULATED VOLTAGE
4V FEEDBACK
SATURN CONTROL RELAY & CKT USED IN CSM ONLY
HARNESS "A"
IMU OPERATE
COARSE ALIGN ENABLE
CDU Z
R/R D/A ENABLE
R/R ZERO ENABLE
ERROR CTR ENABLE
R/R CDU FAIL
IMU CDU FAIL
DISPLAY INERTIAL DATA
INNER D/A MOD.
MIDDLE D/A MOD.
OUTER D/A MOD.
SHAFT D/A MOD.
TRUNNION D/A MOD
FORWARD VELOCITY
LATERAL VELOCITY
NOT USED IN LEM
CLOCK & LOGIC TIMING DIAGRAM
FIGURE - 1
(ISS, R/R SHAFT & R/R TRUNNION) I2, I3 GENERATOR TIMING DIAGRAM
VARIABLE TIME FROM 80 TO 20 μ SEC
FIGURE - 2
6015562
SHT 3 OF 3

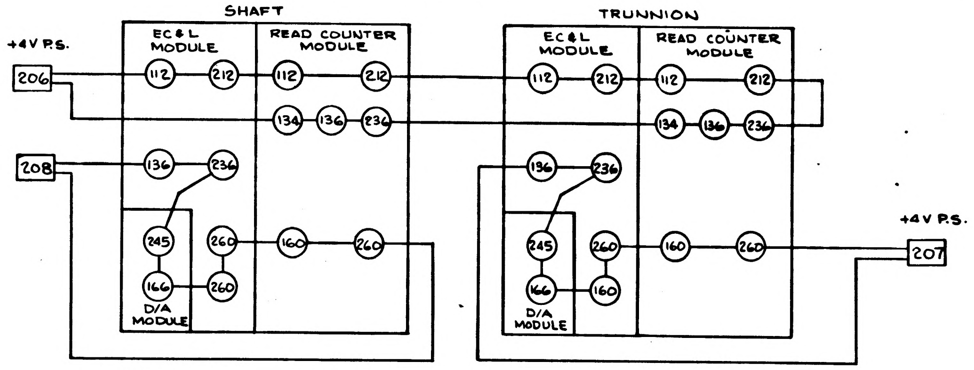
TRAY X +4V HI DISTRIBUTION



+4V P.S.
TRUNNION
+4V P.S.
101
102
103
104
READ COUNTER MODULE
EC&L MODULE
SHAFT
READ COUNTER MODULE
EC&L MODULE
224
124
248
148

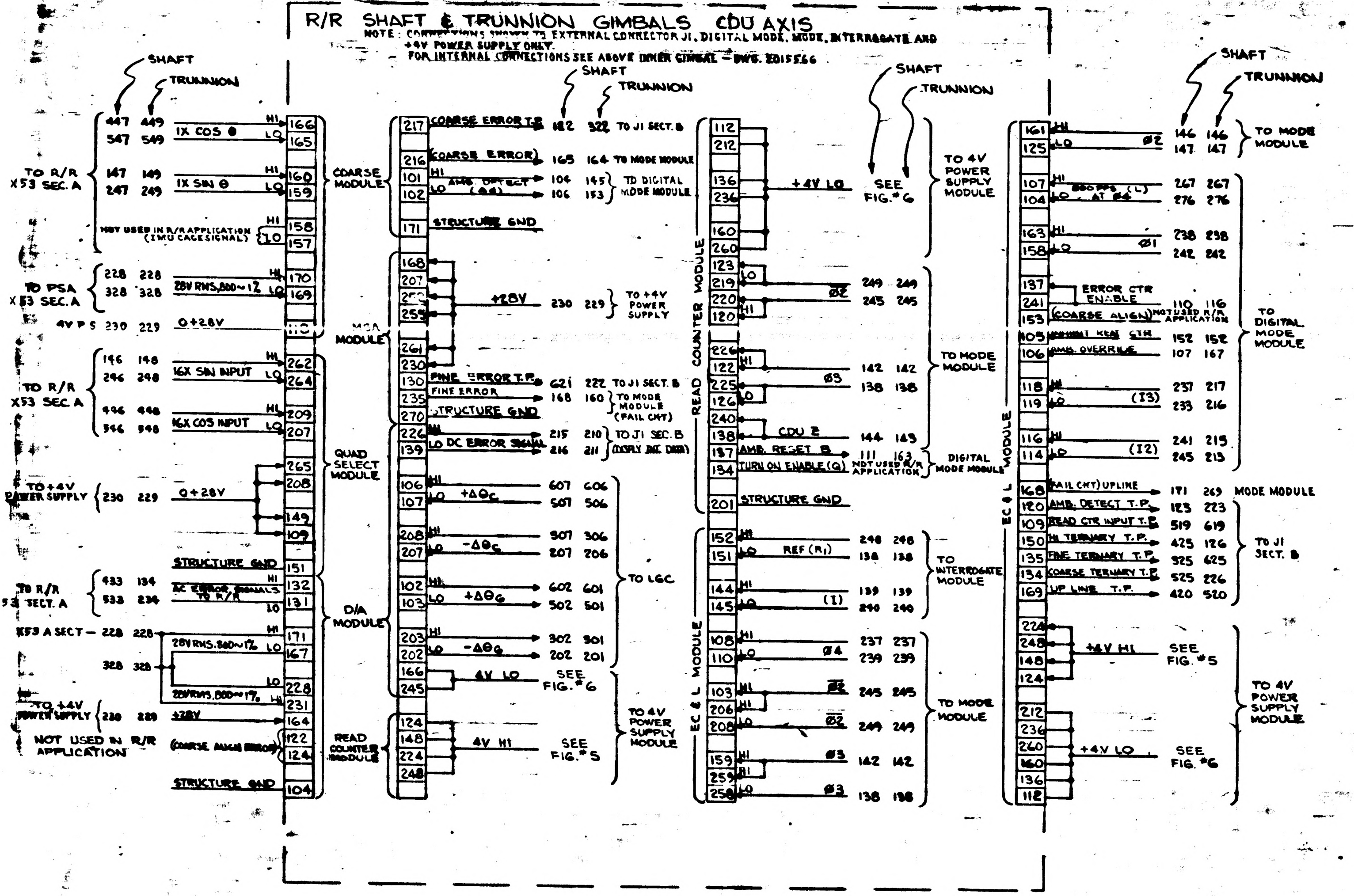
FIGURE #5

TRAY X +4V LO DISTRIBUTION

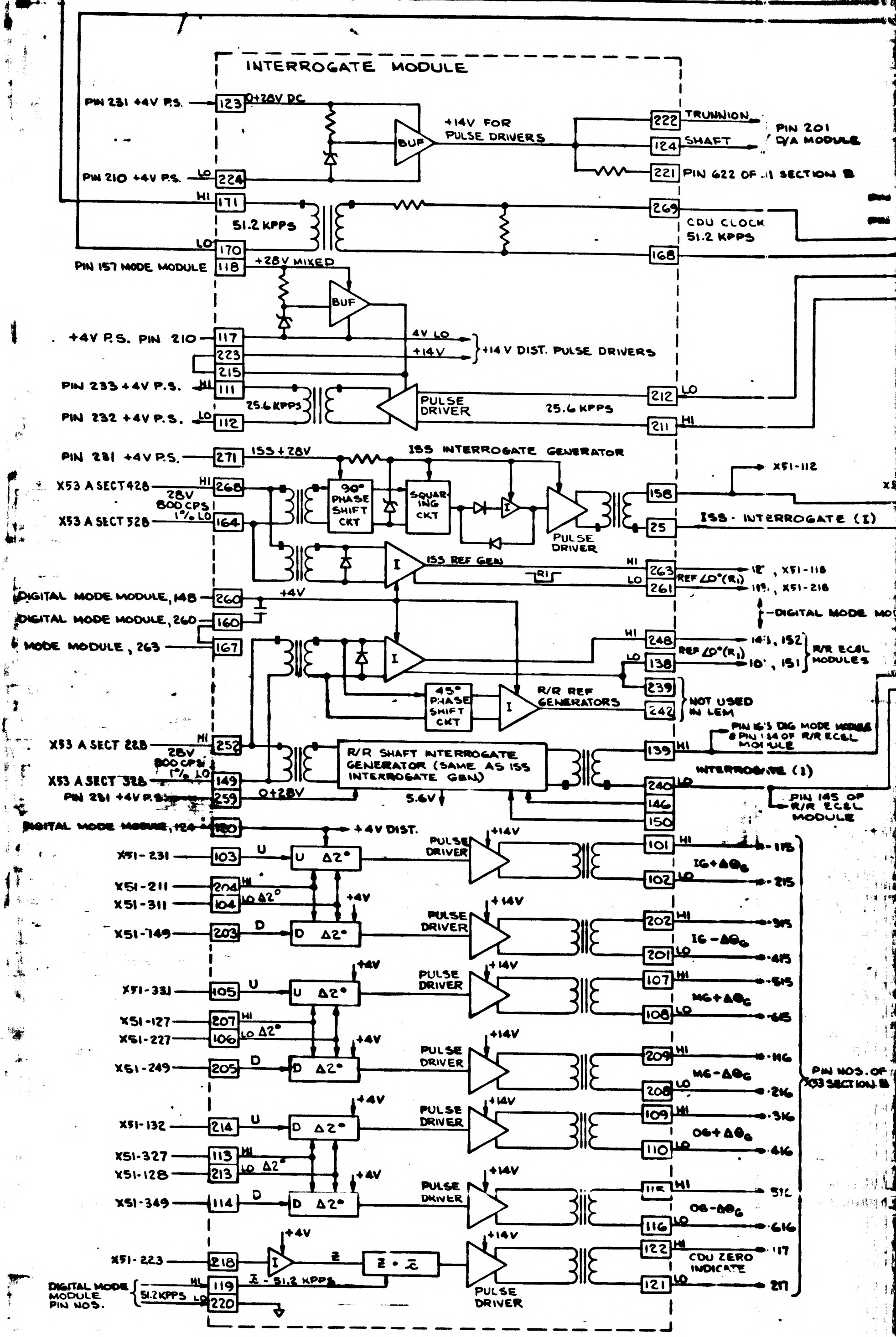


SHAFT
TRUNNION
+4V P.S.
206
208
EC&L MODULE
READ COUNTER MODULE
D/A MODULE
+4V P.S.
207
112
212
134
136
236
245
260
166
160

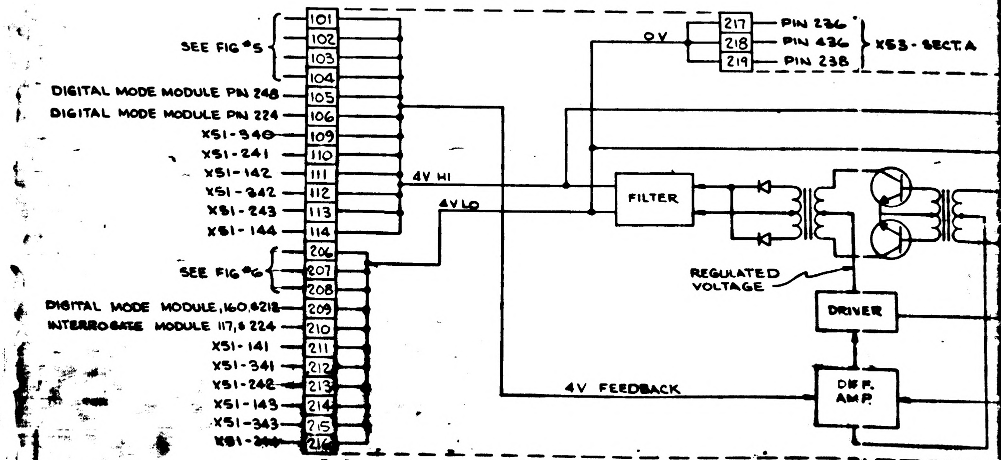
FIGURE #6



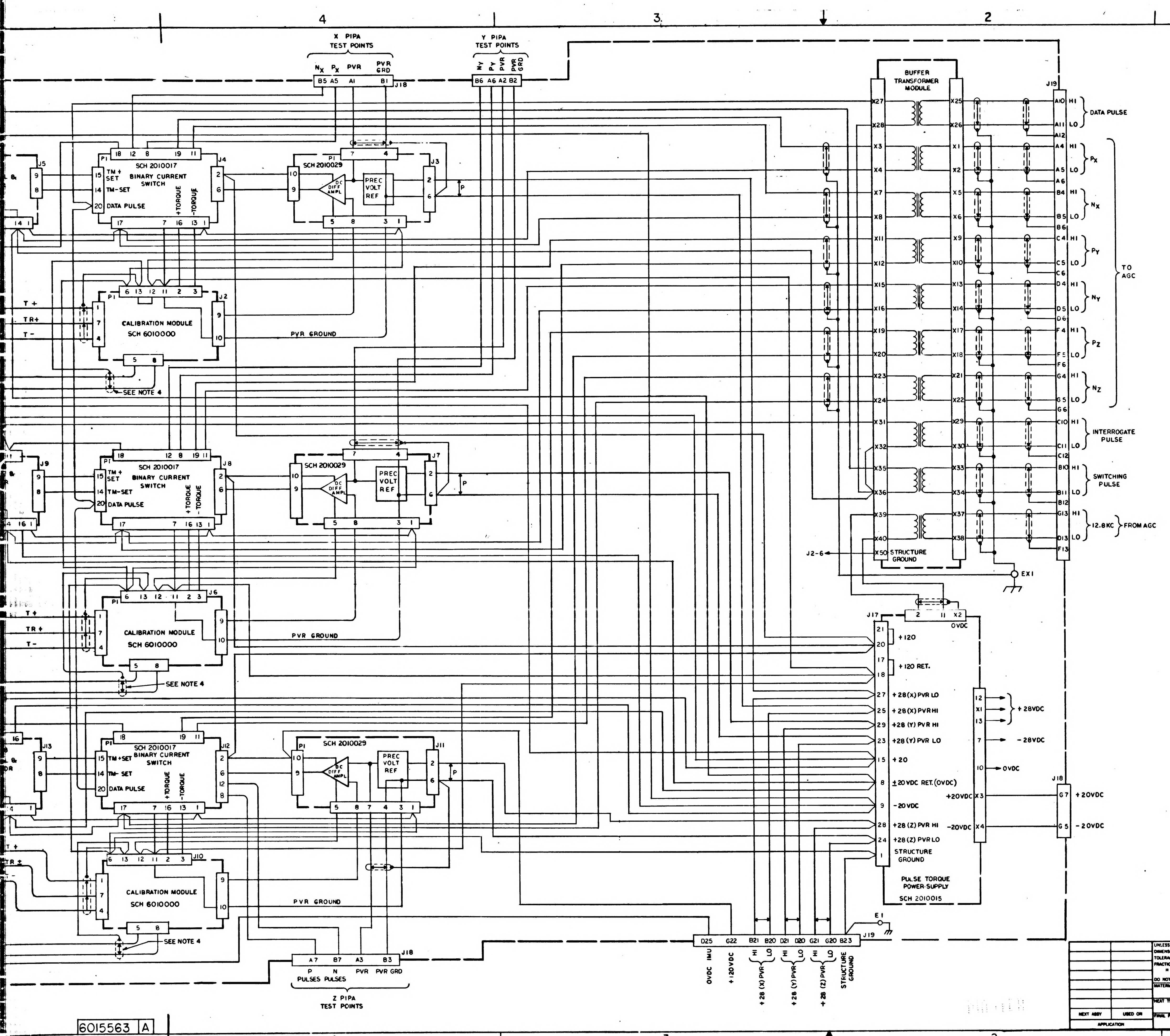
R/R SHAFT & TRUNNION GIMBALS CDU AXIS
NOTE: CONNECTIONS SHOWN TO EXTERNAL CONNECTOR J1, DIGITAL MODE, MODE, INTERROGATE AND +4V POWER SUPPLY ONLY.
FOR INTERNAL CONNECTIONS SEE ABOVE INNER GIMBAL - DWG. 6015566
SHAFT
TRUNNION
TO R/R X53 SEC.A
1X COS θ
1X SIN θ
NOT USED IN R/R APPLICATION (IMU CAGE SIGNAL)
TO PSA X53 SEC.A
28V RMS, 800~1%
4V P.S.
0+28V
TO R/R X53 SEC A
16X SIN INPUT
16X COS INPUT
TO +4V POWER SUPPLY
STRUCTURE GND
TO R/R X53 SECT.A
X53 A SECT
TO +4V POWER SUPPLY
NOT USED IN R/R APPLICATION
COARSE MODULE
MSA MODULE
QUAD SELECT MODULE
D/A MODULE
READ COUNTER MODULE
COARSE ERROR T.P.
COARSE ERROR
AMP. OFFSET
STRUCTURE GND
+28V
FINE ERROR T.P.
FINE ERROR
LO DC ERROR SIGNAL
+Δθc
-Δθc
+ΔθG
-ΔθG
4V LO
4V HI
SEE FIG.#6
SEE FIG.#5
TO J1 SECT. B
TO MODE MODULE
TO DIGITAL MODE MODULE
TO +4V POWER SUPPLY
TO LGC
READ COUNTER MODULE
EC&L MODULE
+4V LO
CDU Z
AMB. RESET B
TURN ON ENABLE (Q)
STRUCTURE GND
REF (R1)
TO 4V POWER SUPPLY MODULE
TO MODE MODULE
DIGITAL MODE MODULE
TO INTERROGATE MODULE
ERROR CTR ENABLE
COARSE ALIGN
NOT USED R/R APPLICATION
AMB. OVERRIDE
FAIL CNT UPLINE
AMB. DETECT T.P.
READ CTR INPUT T.P.
HI TERNARY T.P.
FINE TERNARY T.P.
COARSE TERNARY T.P.
UP LINE T.P.
+4V HI
+4V LO
SEE FIG.#5
SEE FIG.#6
TO MODE MODULE
TO DIGITAL MODE MODULE
TO J1 SECT. B
TO 4V POWER SUPPLY MODULE
MODE MODULE



INTERROGATE MODULE
PIN 231 +4V P.S.
0+20V DC
+14V FOR PULSE DRIVERS
BUF
TRUNNION
SHAFT
PIN 201 C/A MODULE
PIN 622 OF J1 SECTION B
PIN 210 +4V P.S.
51.2 KPPS
CDU CLOCK 51.2 KPPS
PIN 157 MODE MODULE
+28V MIXED
+4V P.S. PIN 210
+14V DIST. PULSE DRIVERS
PIN 233 +4V P.S.
PIN 232 +4V P.S.
25.6 KPPS
PULSE DRIVER
PIN 231 +4V P.S.
155 +28V
155 INTERROGATE GENERATOR
X53 A SECT 42B
X53 A SECT 52B
28V 800 CPS 1% LO
90° PHASE SHIFT CKT
SQUARING CKT
PULSE DRIVER
155 - INTERROGATE (I)
155 REF GEN
REF ∠0° (R1)
DIGITAL MODE MODULE
45° PHASE SHIFT CKT
R/R REF GENERATORS
R/R EC&L MODULES
NOT USED IN LEM
X53 A SECT 22B
X53 A SECT 32B
R/R SHAFT INTERROGATE GENERATOR (SAME AS 155 INTERROGATE GEN.)
INTERROGATE (I)
PIN 145 OF R/R EC&L MODULE
+4V DIST.
PULSE DRIVER
U
D
Δ2°
1G+ΔθG
1G-ΔθG
MG+ΔθG
MG-ΔθG
OG+ΔθG
OG-ΔθG
PIN NOS. OF X53 SECTION B
CDU ZERO INDICATE
DIGITAL MODE MODULE PIN NOS.
51.2 KPPS



SEE FIG #5
DIGITAL MODE MODULE PIN 248
DIGITAL MODE MODULE PIN 224
SEE FIG #6
DIGITAL MODE MODULE, 160, 218
INTERROGATE MODULE 117, 224
0V
PIN 236
PIN 436
PIN 238
X53-SECT.A
4V HI
4V LO
FILTER
REGULATED VOLTAGE
DRIVER
DIFF. AMP.
4V FEEDBACK


4
3
2
1
D
C
B
A
X PIPA TEST POINTS
N_X P_X PVR PVR GRD
B5 A5 A1 B1 J18
Y PIPA TEST POINTS
N_Y P_Y PVR PVR GRD
B6 A6 A2 B2
J5
J4
P1
SCH 2010017
BINARY CURRENT SWITCH
TM + SET
TM-SET
DATA PULSE
+TORQUE
-TORQUE
SCH 2010029
DC DIFF AMPL
PREC VOLT REF
J3
P
J2
CALIBRATION MODULE
SCH 6010000
T +
TR +
T -
PVR GROUND
SEE NOTE 4
J9
J8
J7
J6
J13
J12
J11
J10
Z PIPA TEST POINTS
P PULSES
N PULSES
PVR
PVR GRD
A7 B7 A3 B3 J18
BUFFER TRANSFORMER MODULE
STRUCTURE GROUND
J2-6
EX1
J19
DATA PULSE
P_X
N_X
P_Y
N_Y
P_Z
N_Z
TO AGC
INTERROGATE PULSE
SWITCHING PULSE
12.8KC
FROM AGC
HI
LO
J17
0VDC
+120
+120 RET.
+28 (X) PVR LO
+28 (X) PVR HI
+28 (Y) PVR HI
+28 (Y) PVR LO
+20
±20VDC RET. (0VDC)
-20VDC
+28 (Z) PVR HI
+28 (Z) PVR LO
STRUCTURE GROUND
PULSE TORQUE POWER SUPPLY
SCH 2010015
+28VDC
-28VDC
0VDC
+20VDC
-20VDC
J18
G7 +20VDC
G5 -20VDC
E1
D25 G22 B21 B20 D21 D20 G21 G20 B23
0VDC IMU
+120VDC
+28 (X) PVR
+28 (Y) PVR
+28 (Z) PVR
STRUCTURE GROUND
6015563 A

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 19172	25	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

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DIMENSIONS ARE IN INCHES
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MATERIAL —
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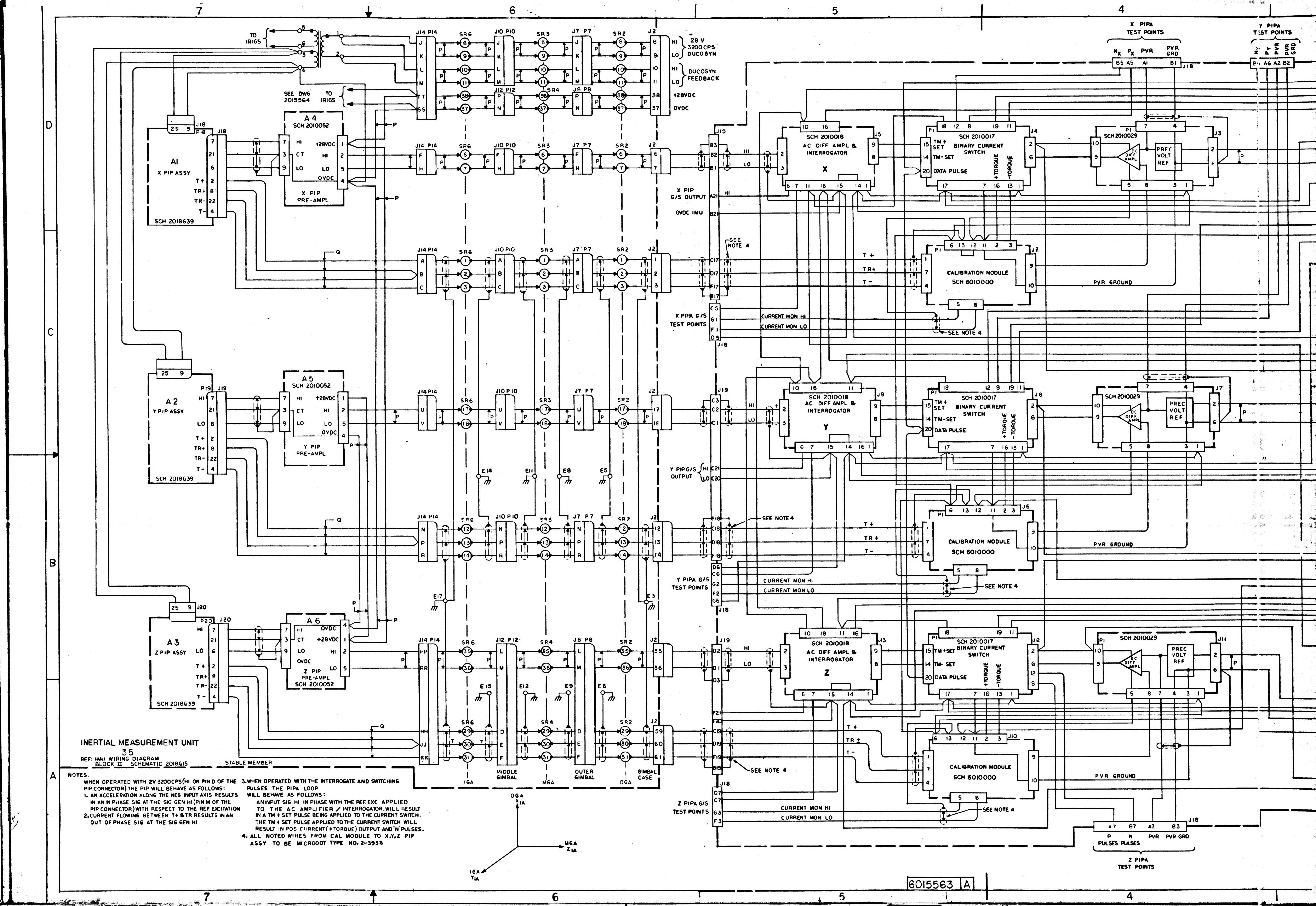
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN A. DiLeo DATE
CHECKED
APPROVAL 12/1/64
APPROVAL 12/23/64
NASA APPROVAL 12-23-64
MIT APPROVAL 23 Dec 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)

CODE IDENT NO —
SIZE J
NASA DRAWING NO 6015563
SCALE —
WT —
SHEET 1 OF 1

6015563 A


7
6
5
4
D
C
B
A
TO IRIGS
SEE DWG 2015564
TO IRIGS
28 V 3200 CPS DUCOSYN
DUCOSYN FEEDBACK
+28VDC
OVDC
A1
X PIP ASSY
SCH 2018639
A4
SCH 2010052
X PIP PRE-AMPL
A2
Y PIP ASSY
SCH 2018639
A5
SCH 2010052
Y PIP PRE-AMPL
A3
Z PIP ASSY
SCH 2018639
A6
Z PIP PRE-AMPL
SCH 2010052
J14 P14
SR6
J10 P10
SR3
J7 P7
SR2
J2
J12 P12
SR4
J8 P8
E14
E11
E8
E5
E17
E3
E15
E12
E9
E6
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
IGA
MGA
OGA
X PIP G/S OUTPUT
OVDC IMU
SEE NOTE 4
X PIPA G/S TEST POINTS
CURRENT MON HI
CURRENT MON LO
Y PIP G/S OUTPUT
Y PIPA G/S TEST POINTS
Z PIPA G/S TEST POINTS
J19
J18
J20
SCH 2010018
AC DIFF AMPL & INTERROGATOR
X
Y
Z
SCH 2010017
BINARY CURRENT SWITCH
TM + SET
TM - SET
DATA PULSE
+TORQUE
-TORQUE
CALIBRATION MODULE
SCH 6010000
PVR GROUND
SCH 2010029
DC DIFF AMPL
PREC VOLT REF
X PIPA TEST POINTS
Y PIPA TEST POINTS
Z PIPA TEST POINTS
P PULSES
N PULSES
PVR
PVR GRD
OGA X_IA
MGA Z_IA
IGA Y_IA

INERTIAL MEASUREMENT UNIT
35

REF: IMU WIRING DIAGRAM
BLOCK II SCHEMATIC 2018615

STABLE MEMBER

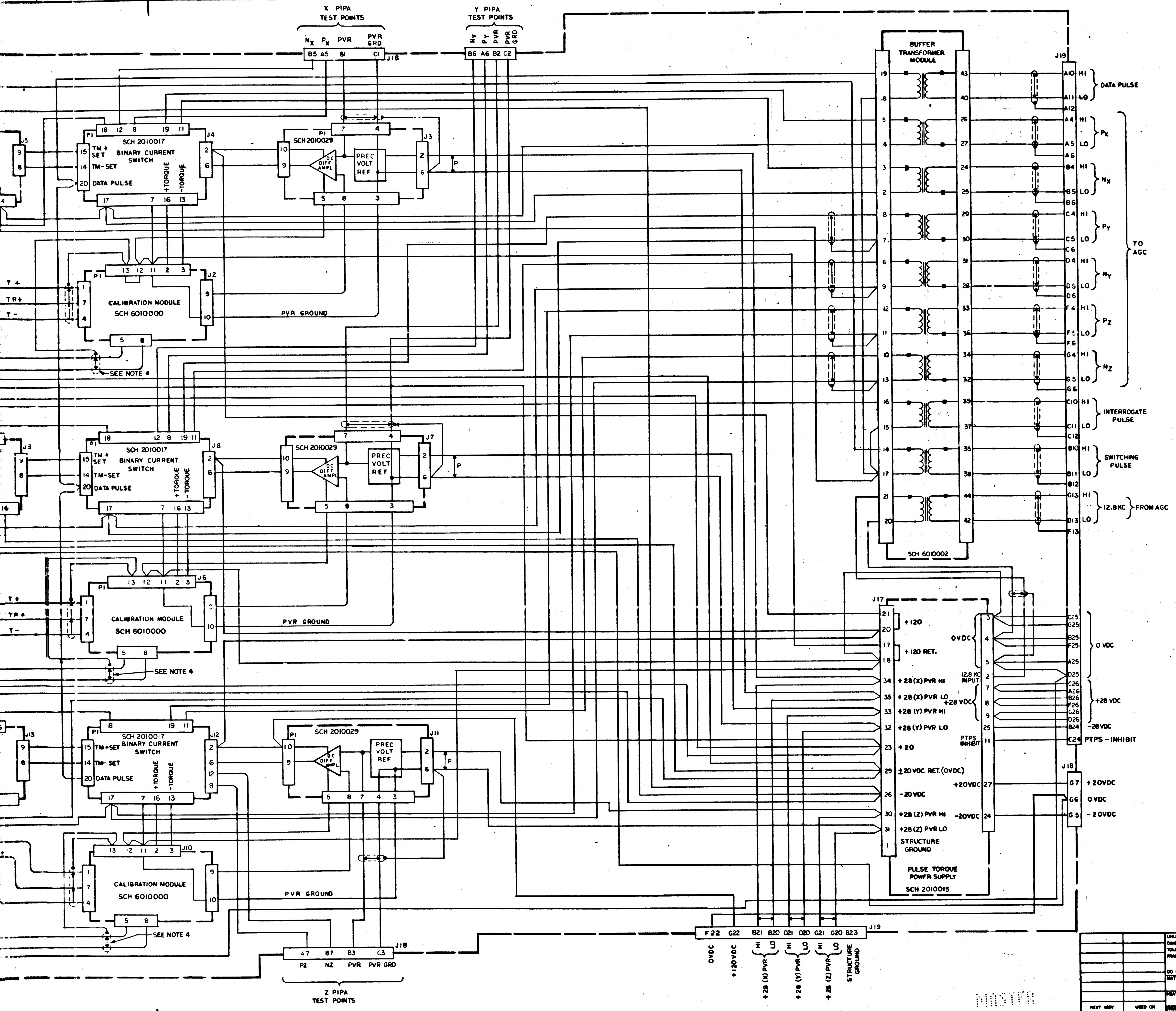
NOTES.

WHEN OPERATED WITH 2V 3200CPS (HI ON PIN D OF THE PIP CONNECTOR) THE PIP WILL BEHAVE AS FOLLOWS:

1. AN ACCELERATION ALONG THE NEG INPUT AXIS RESULTS IN AN IN PHASE SIG AT THE SIG GEN HI (PIN M OF THE PIP CONNECTOR) WITH RESPECT TO THE REF EXCITATION
2. CURRENT FLOWING BETWEEN T+ & TR RESULTS IN AN OUT OF PHASE SIG AT THE SIG GEN HI
3. WHEN OPERATED WITH THE INTERROGATE AND SWITCHING PULSES THE PIPA LOOP WILL BEHAVE AS FOLLOWS:
   AN INPUT SIG. HI IN PHASE WITH THE REF. EXC APPLIED TO THE AC AMPLIFIER / INTERROGATOR, WILL RESULT IN A TM + SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM + SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POS CURRENT (+TORQUE) OUTPUT AND "N" PULSES.
4. ALL NOTED WIRES FROM CAL MODULE TO X,Y,Z PIP ASSY TO BE MICRODOT TYPE NO. 2-3938

6015563 A

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 19172	25 May 65	WK
B	REVISED PER TDRR 22302	10 SEP 65	WK


X PIPA TEST POINTS
N_X P_X PVR PVR GRD
B5 A5 B1 C1 J18
Y PIPA TEST POINTS
N_Y P_Y PVR PVR GRD
B6 A6 B2 C2
SCH 2010017
BINARY CURRENT SWITCH
TM + SET
TM - SET
DATA PULSE
+TORQUE
-TORQUE
SCH 2010029
DC DIFF AMPL
PREC VOLT REF
P
CALIBRATION MODULE
SCH 6010000
PVR GROUND
SEE NOTE 4
T +
TR +
T -
BUFFER TRANSFORMER MODULE
SCH 6010002
J19
DATA PULSE
P_X
N_X
P_Y
N_Y
P_Z
N_Z
TO AGC
INTERROGATE PULSE
SWITCHING PULSE
12.8KC FROM AGC
HI
LO
J17
+120
+120 RET.
OVDC
+28(X) PVR HI
+28(X) PVR LO
+28(Y) PVR HI
+28(Y) PVR LO
+20
±20VDC RET.(OVDC)
-20VDC
+28(Z) PVR HI
+28(Z) PVR LO
STRUCTURE GROUND
12.8 KC INPUT
+28 VDC
PTPS INHIBIT
+20VDC
-20VDC
PULSE TORQUE POWER SUPPLY
SCH 2010015
0 VDC
+28 VDC
-28 VDC
PTPS - INHIBIT
J18
+20VDC
0VDC
-20VDC
F22 G22 B21 B20 D21 D20 G21 G20 B23 J19
OVDC
+120VDC
+28 (X) PVR
+28 (Y) PVR
+28 (Z) PVR
STRUCTURE GROUND
Z PIPA TEST POINTS
PZ NZ PVR PVR GRD
A7 B7 B3 C3 J18
MASTER

REF:
INTERCONNECT LIST FOR PTA HEADER DWG NO. 6014522
INTERCONNECT LIST FOR WIRE HARNESS B DWG NO. 6014505

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

NEXT ASSY | USED ON
APPLICATION

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APPROVAL J Green 12/1/64
APPROVAL 12/23/64
NASA APPROVAL W J Rhine 12-23-64
MIT APPROVAL W Kupfer 23 Dec 64

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TWO WIRE MECHANIZATION
OF APOLLO PIPA LOOPS
(LEM)

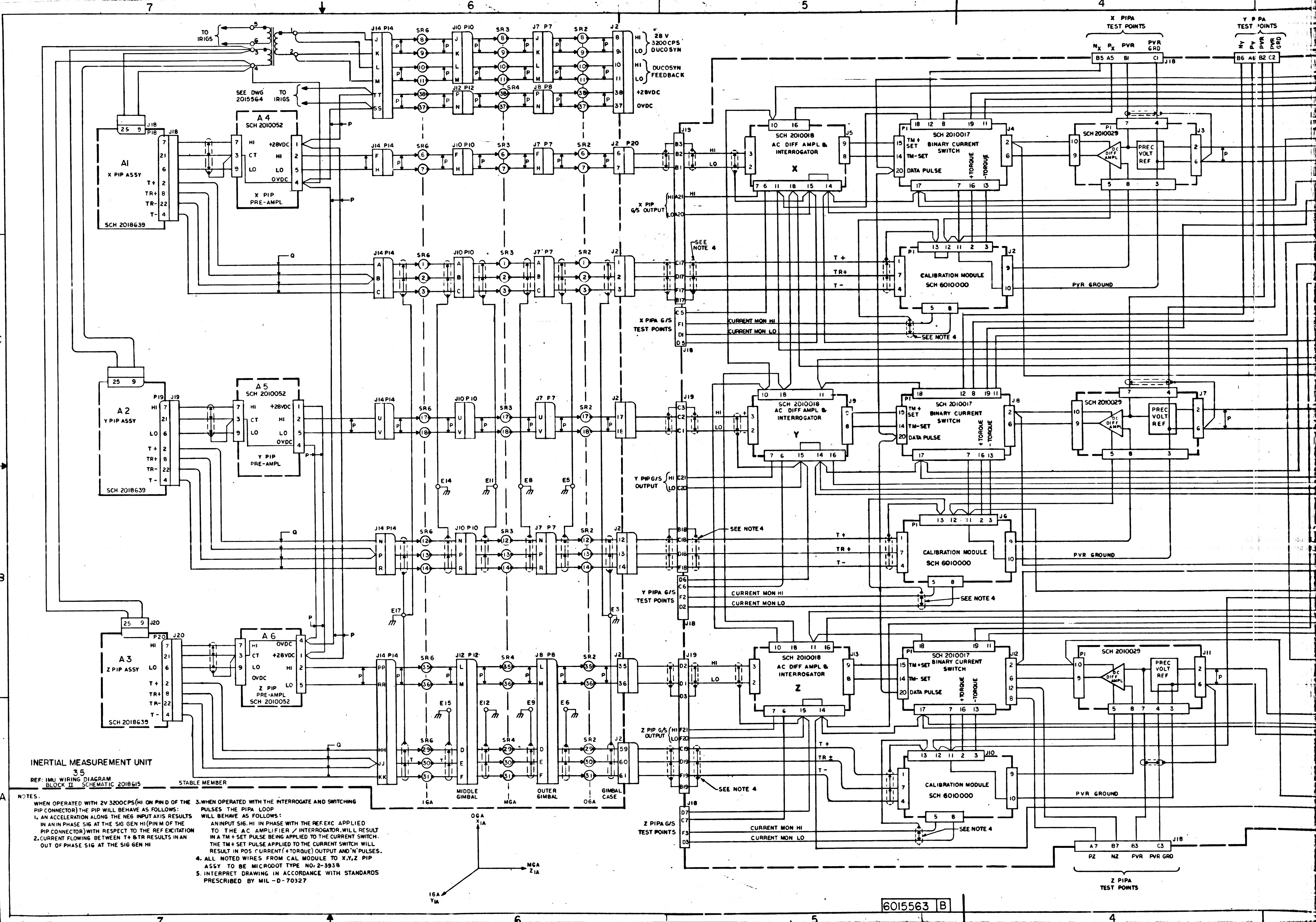
CODE IDENT NO. —
SIZE J
NASA DRAWING NO. 6015563
SCALE —
WT —
SHEET 1 OF 1

6015563 B

6015563 B

2H

F-2


7
6
5
4
D
C
B
A
TO IRIGS
SEE DWG 2015564
TO IRIGS
28 V 3200 CPS DUCOSYN
DUCOSYN FEEDBACK
+28VDC
OVDC
J14 P14
J10 P10
J12 P12
J7 P7
J8 P8
J2 P20
SR6
SR3
SR4
SR2
A1
X PIP ASSY
SCH 2018639
A2
Y PIP ASSY
A3
Z PIP ASSY
A4
SCH 2010052
X PIP PRE-AMPL
A5
Y PIP PRE-AMPL
A6
Z PIP PRE-AMPL
X PIP G/S OUTPUT
X PIPA G/S TEST POINTS
Y PIP G/S OUTPUT
Y PIPA G/S TEST POINTS
Z PIP G/S OUTPUT
Z PIPA G/S TEST POINTS
SEE NOTE 4
CURRENT MON HI
CURRENT MON LO
SCH 2010018
AC DIFF AMPL & INTERROGATOR
X
Y
Z
SCH 2010017
BINARY CURRENT SWITCH
TM + SET
TM-SET
DATA PULSE
+TORQUE
-TORQUE
CALIBRATION MODULE
SCH 6010000
PVR GROUND
SCH 2010029
DC DIFF AMPL
PREC VOLT REF
X PIPA TEST POINTS
Y PIPA TEST POINTS
Z PIPA TEST POINTS
PVR
PVR GRD
IGA
MIDDLE GIMBAL
MGA
OUTER GIMBAL
OGA
GIMBAL CASE
E14
E11
E8
E5
E17
E3
E15
E12
E9
E6
OGA Z_{IA}
MGA Z_{IA}
IGA Y_{IA}
6015563 B

INERTIAL MEASUREMENT UNIT

35

REF: IMU WIRING DIAGRAM
BLOCK II SCHEMATIC 2018615

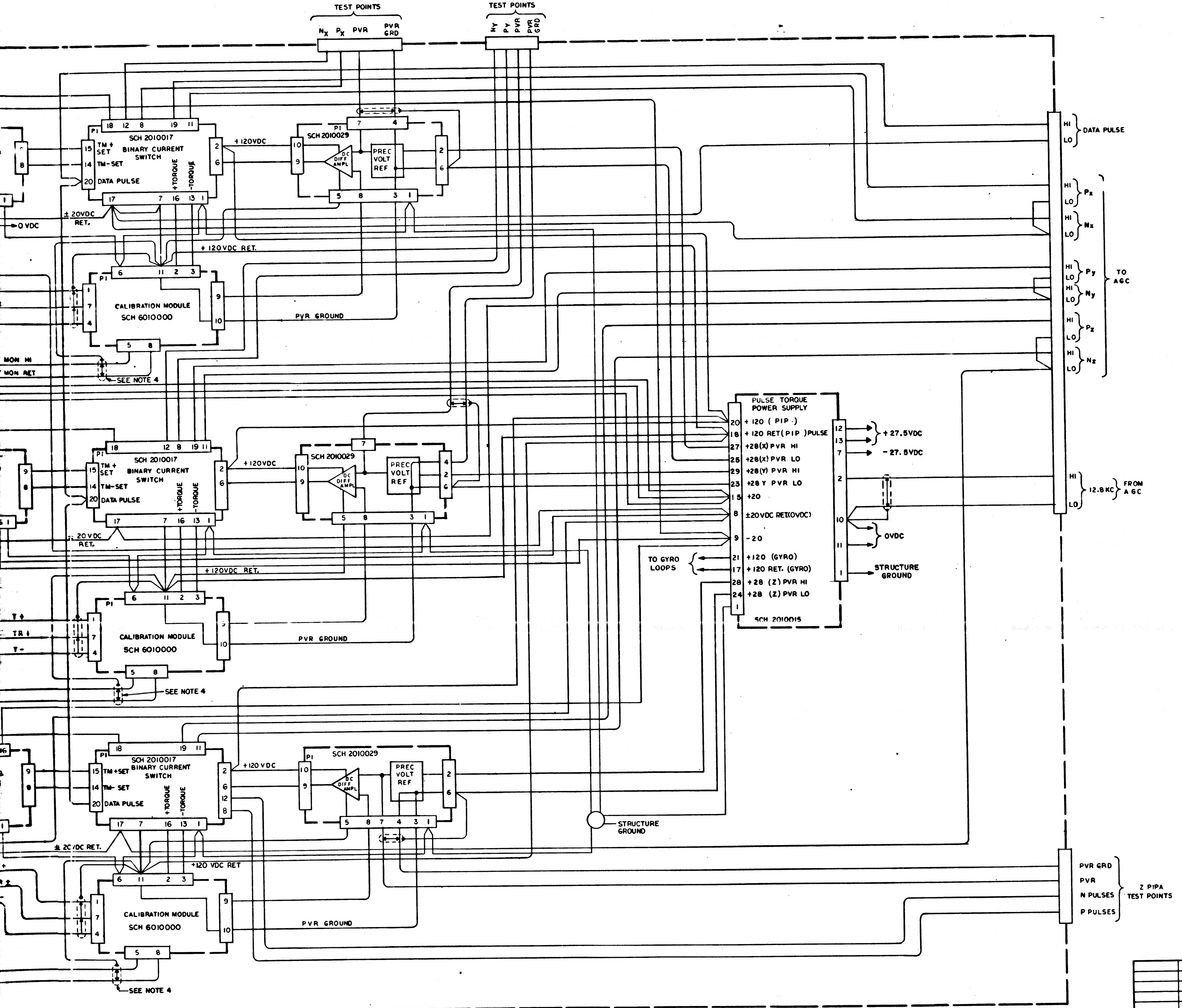
STABLE MEMBER

NOTES.

WHEN OPERATED WITH 2V 3200CPS(HI ON PIN D OF THE PIP CONNECTOR) THE PIP WILL BEHAVE AS FOLLOWS:

1. AN ACCELERATION ALONG THE NEG INPUT AXIS RESULTS IN AN IN PHASE SIG AT THE SIG GEN HI (PIN M OF THE PIP CONNECTOR) WITH RESPECT TO THE REF EXCITATION
2. CURRENT FLOWING BETWEEN T+ & TR RESULTS IN AN OUT OF PHASE SIG AT THE SIG GEN HI
3. WHEN OPERATED WITH THE INTERROGATE AND SWITCHING PULSES THE PIPA LOOP WILL BEHAVE AS FOLLOWS:
   AN INPUT SIG. HI IN PHASE WITH THE REF. EXC APPLIED TO THE AC AMPLIFIER / INTERROGATOR, WILL RESULT IN A TM + SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM + SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POS CURRENT (+TORQUE) OUTPUT AND "N" PULSES.
4. ALL NOTED WIRES FROM CAL MODULE TO X,Y,Z PIP ASSY TO BE MICRODOT TYPE NO. 2-3938
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS


X PIPA TEST POINTS
N_X P_X PVR PVR GRD
Y PIPA TEST POINTS
N_Y P_Y PVR PVR GRD
P1
18 12 8 19 11
15 TM + SET
14 TM - SET
20 DATA PULSE
SCH 2010017
BINARY CURRENT SWITCH
+TORQUE
-TORQUE
17 7 16 13 1
+120VDC
SCH 2010029
DC DIFF AMPL
PREC VOLT REF
5 8 3 1
± 20VDC RET.
0 VDC
+120VDC RET.
6 11 2 3
CALIBRATION MODULE
SCH 6010000
PVR GROUND
5 8
MON HI
MON RET
SEE NOTE 4
T +
TR +
T -
± 20VDC RET.
+120 VDC RET
STRUCTURE GROUND
PULSE TORQUE POWER SUPPLY
20 + 120 (PIP -)
18 + 120 RET (PIP) PULSE
27 +28(X) PVR HI
25 +28(X) PVR LO
29 +28(Y) PVR HI
23 +28 Y PVR LO
15 +20
8 ±20VDC RET(OVDC)
9 -20
21 +120 (GYRO)
17 +120 RET. (GYRO)
28 +28 (Z) PVR HI
24 +28 (Z) PVR LO
1
SCH 2010015
TO GYRO LOOPS
12 13 + 27.5VDC
7 - 27.5VDC
10 11 OVDC
1 STRUCTURE GROUND
HI LO DATA PULSE
HI LO P_x
HI LO N_x
HI LO P_y
HI LO N_y
HI LO P_z
HI LO N_z
TO AGC
HI LO 12.8KC FROM AGC
PVR GRD
PVR
N PULSES
P PULSES
Z PIPA TEST POINTS

D

C

B

A

6015563

2H

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

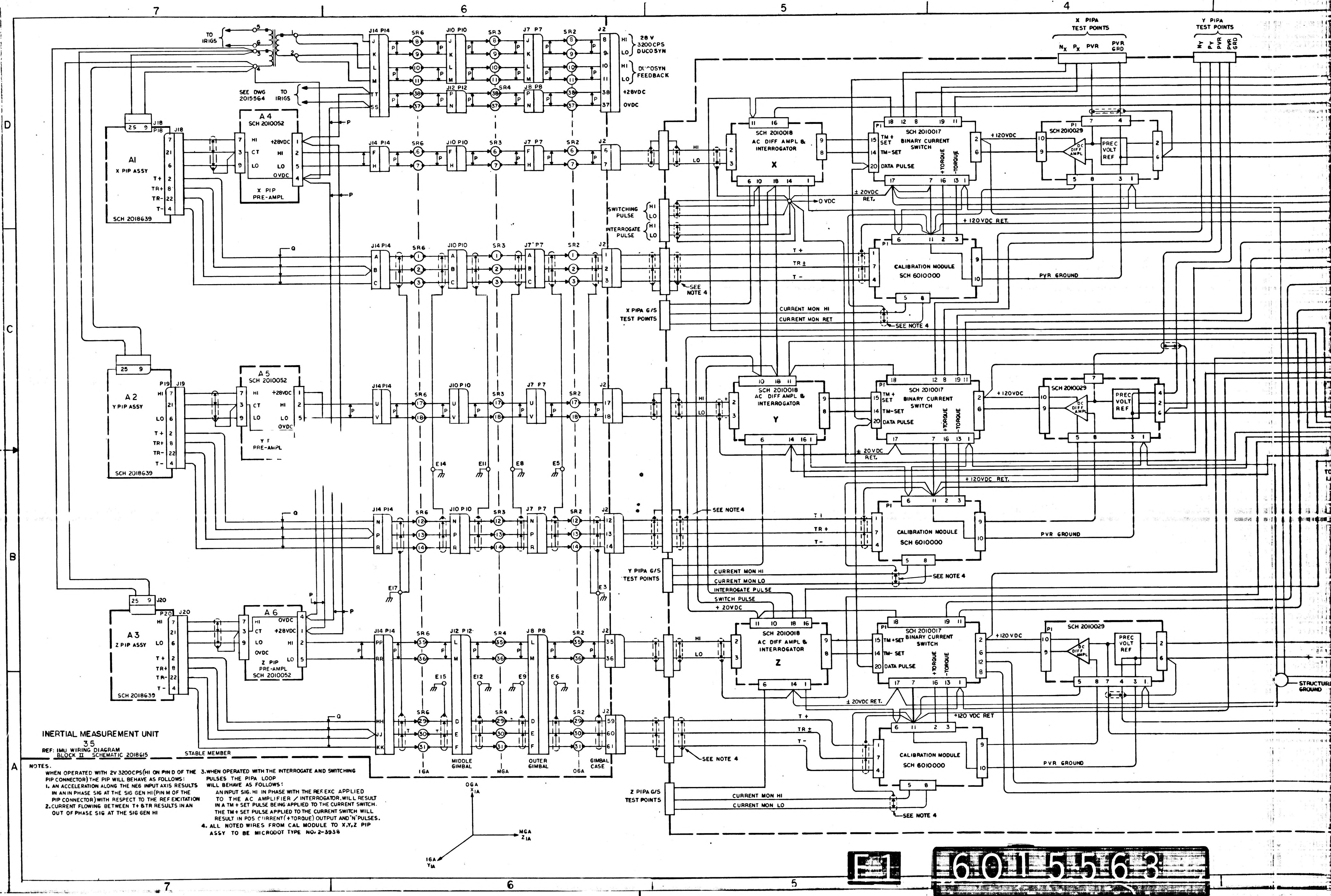
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN A. DiLeo DATE
CHECKED
APPROVAL J. Green 12/1/64
APPROVAL 12/23/64
NASA APPROVAL W J Rhine 12-23-64
MIT APPROVAL 23 Dec 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TWO WIRE MECHANIZATION
OF APOLLO PIPA LOOPS
(LEM)

CODE IDENT NO. — SIZE J NASA DRAWING NO. 6015563
SCALE — WT — SHEET 1 OF 1

F-2



7
6
5
4
D
C
B
A
TO IRIGS
SEE DWG 2015564
TO IRIGS
J14 P14
SR6
J10 P10
SR3
J7 P7
SR2
J2
J12 P12
SR4
J8 P8
28 V 3200CPS DUCOSYN
HI
LO
DUCOSYN FEEDBACK
+28VDC
OVDC
A1
X PIP ASSY
SCH 2018639
J18
P18
A4
SCH 2010052
X PIP PRE-AMPL
A2
Y PIP ASSY
P19
J19
A5
SCH 2010052
Y P PRE-AMPL
A3
Z PIP ASSY
P20
J20
A6
Z PIP PRE-AMPL
SCH 2010052
HI
CT
LO
T+
TR+
TR-
T-
+28VDC
OVDC
P
Q
E14
E11
E8
E5
E17
E3
E15
E12
E9
E6
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
IGA
MGA
OGA
SWITCHING PULSE
INTERROGATE PULSE
X PIPA G/S TEST POINTS
Y PIPA G/S TEST POINTS
Z PIPA G/S TEST POINTS
SEE NOTE 4
SCH 2010018
AC DIFF AMPL & INTERROGATOR
X
Y
Z
SCH 2010017
BINARY CURRENT SWITCH
TM + SET
TM-SET
DATA PULSE
+TORQUE
-TORQUE
SCH 2010029
DC DIFF AMPL
PREC VOLT REF
+120VDC
+120VDC RET.
± 20VDC RET.
+ 20VDC
0 VDC
CALIBRATION MODULE
SCH 6010000
PVR GROUND
CURRENT MON HI
CURRENT MON RET
CURRENT MON LO
INTERROGATE PULSE
SWITCH PULSE
X PIPA TEST POINTS
N_X
P_X
PVR
PVR GRD
Y PIPA TEST POINTS
NY
PY
PVR
PVR GRD
STRUCTURE GROUND
OGA
X_{IA}
MGA
Z_{IA}
IGA
Y_{IA}
STABLE MEMBER

INERTIAL MEASUREMENT UNIT

35

REF: IMU WIRING DIAGRAM
BLOCK II SCHEMATIC 2018615

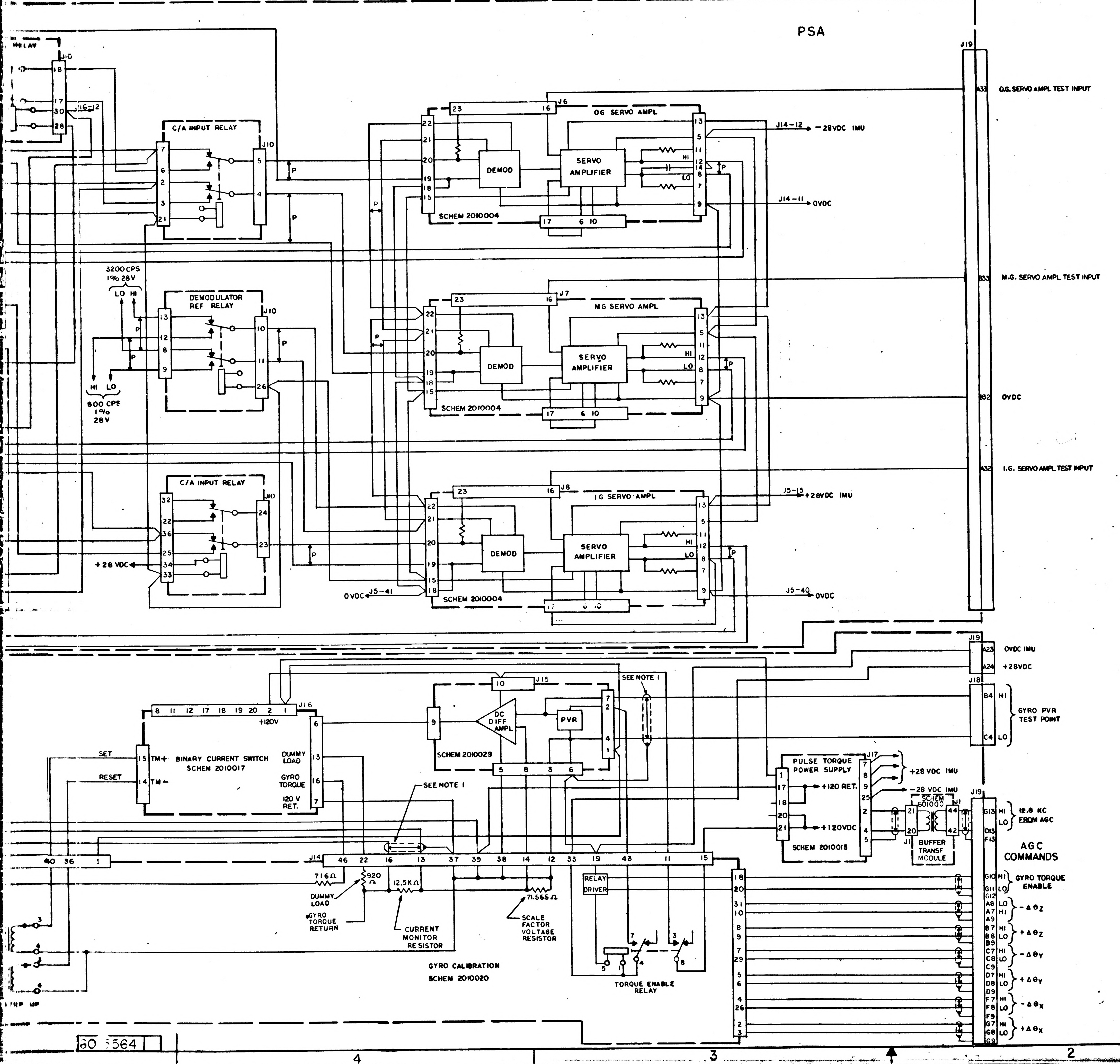
NOTES.

WHEN OPERATED WITH 2V 3200CPS(HI ON PIN D OF THE PIP CONNECTOR) THE PIP WILL BEHAVE AS FOLLOWS:

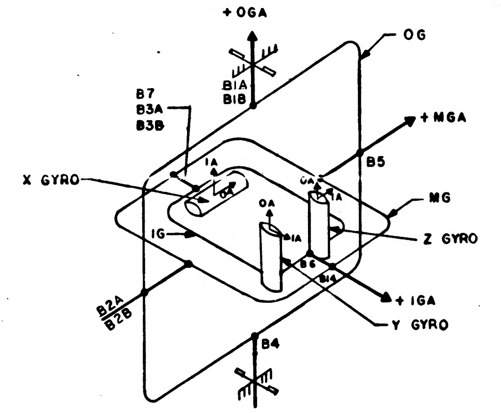
1. AN ACCELERATION ALONG THE NEG INPUT AXIS RESULTS IN AN IN PHASE SIG AT THE SIG GEN HI (PIN M OF THE PIP CONNECTOR) WITH RESPECT TO THE REF EXCITATION
2. CURRENT FLOWING BETWEEN T+ & TR RESULTS IN AN OUT OF PHASE SIG AT THE SIG GEN HI
3. WHEN OPERATED WITH THE INTERROGATE AND SWITCHING PULSES THE PIPA LOOP WILL BEHAVE AS FOLLOWS:
   AN INPUT SIG. HI IN PHASE WITH THE REF. EXC APPLIED TO THE AC AMPLIFIER / INTERROGATOR. WILL RESULT IN A TM + SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM + SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POS CURRENT (+TORQUE) OUTPUT AND "N" PULSES.
4. ALL NOTED WIRES FROM CAL MODULE TO X,Y,Z PIP ASSY TO BE MICRODOT TYPE NO. 2-3938

E1 6015563

REVISIONS 19780			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 22303	9-5-65	



PSA
RELAY
J10
J16-12
C/A INPUT RELAY
DEMODULATOR REF RELAY
3200 CPS 1% 28V
LO HI
800 CPS 1% 28V
C/A INPUT RELAY
+28 VDC
P
J6
OG SERVO AMPL
DEMOD
SERVO AMPLIFIER
HI
LO
SCHEM 2010004
J14-12 → -28VDC IMU
J14-11 → 0VDC
J7
MG SERVO AMPL
J8
IG SERVO AMPL
J5-15 → +28VDC IMU
0VDC ← J5-41
J5-40 → 0VDC
J19
A33 O.G. SERVO AMPL TEST INPUT
B33 M.G. SERVO AMPL TEST INPUT
B32 0VDC
A32 I.G. SERVO AMPL TEST INPUT
A23 0VDC IMU
A24 +28VDC
J18
B4 HI
C4 LO
GYRO PVR TEST POINT
J16
+120V
BINARY CURRENT SWITCH SCHEM 2010017
SET
RESET
TM+
TM−
DUMMY LOAD
GYRO TORQUE
120 V RET.
J15
DC DIFF AMPL
PVR
SCHEM 2010029
SEE NOTE 1
PULSE TORQUE POWER SUPPLY
J17
+28 VDC IMU
+120 RET.
-28 VDC IMU
+120VDC
SCHEM 2010015
SCHEM 601000
BUFFER TRANSF MODULE
J1
G13 HI
D13 LO
F13
12.8 KC FROM AGC
AGC COMMANDS
G10 HI
G11 LO
GYRO TORQUE ENABLE
- Δθz
+ Δθz
- Δθy
+ Δθy
- Δθx
+ Δθx
J14
716Ω
920 Ω
12.5KΩ
71.565Ω
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
SCALE FACTOR VOLTAGE RESISTOR
GYRO CALIBRATION SCHEM 2010020
RELAY DRIVER
TORQUE ENABLE RELAY



+OGA
OG
B7
B3A
B3B
B1A
B1B
+MGA
B5
X GYRO
MG
Z GYRO
IG
B2A
B2B
B6
+IGA
Y GYRO
B4

INERTIAL COMPONENT MECHANICAL SCHEM

REF:

INTERCONNECT LISTS
- FOR PTA HEADER 6014522
- FOR PSA HEADER 6014521
- FOR WIRE HARNESS A 6014504
- FOR WIRE HARNESS B 6014505

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

NEXT ASSY | USED ON
APPLICATION

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS

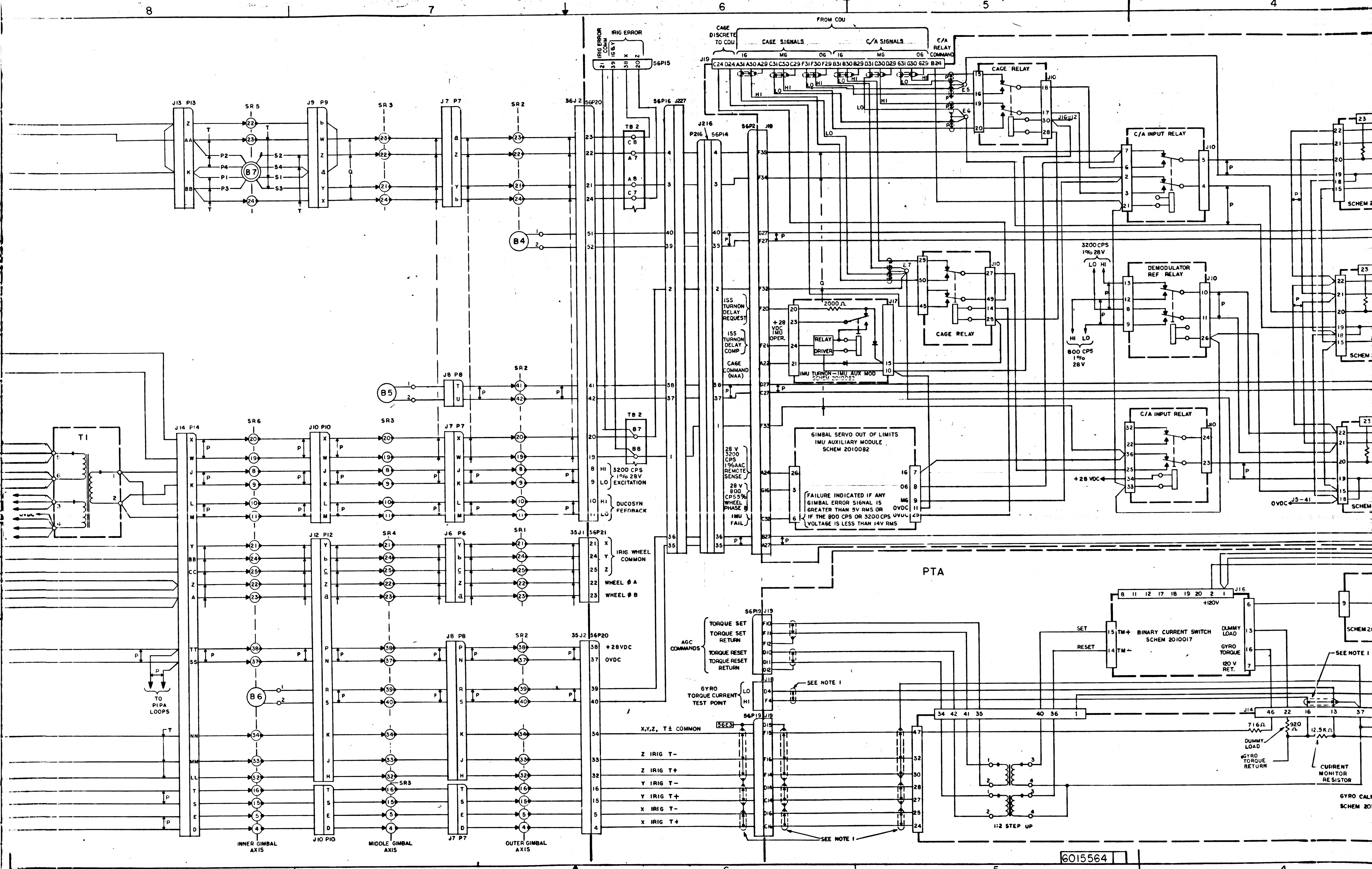
DRAWN A. D. Lao
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W. J. Rh 6-2-65
MIT APPROVAL McMurby 6 2 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 6015564
SCALE —
WT —
SHEET 1 OF 1

6015564


8
7
6
5
4
FROM CDU
CAGE DISCRETE TO CDU
CAGE SIGNALS
C/A SIGNALS
C/A RELAY COMMAND
IRIG ERROR COMM
IRIG ERROR
56P15
J19
CAGE RELAY
J10
C/A INPUT RELAY
SCHEM 2
J13 P13
SR5
J9 P9
SR3
J7 P7
SR2
36J2 56P20
56P16 J227
J216
P216 56P14
56P2 J19
TB 2
B7
B4
B5
B6
T1
J14 P14
SR6
J10 P10
SR4
J12 P12
J6 P6
SR1
35J1 56P21
J8 P8
35J2 56P20
3200 CPS 1% 28V EXCITATION
DUCOSYN FEEDBACK
IRIG WHEEL COMMON
WHEEL ØA
WHEEL ØB
+28VDC
OVDC
TO PIPA LOOPS
INNER GIMBAL AXIS
MIDDLE GIMBAL AXIS
OUTER GIMBAL AXIS
ISS TURNON DELAY REQUEST
ISS TURNON DELAY COMP
CAGE COMMAND (NAA)
+28 VDC IMU OPER.
RELAY DRIVER
2000 Ω
J17
IMU TURNON-IMU AUX MOD
SCHEM 2010082
CAGE RELAY
3200 CPS 1% 28 V
800 CPS 1% 28V
DEMODULATOR REF RELAY
C/A INPUT RELAY
+28 VDC
OVDC J5-41
GIMBAL SERVO OUT OF LIMITS
IMU AUXILIARY MODULE
SCHEM 2010082
28 V 3200 CPS 1%AAC REMOTE SENSE
28 V 800 CPS5% WHEEL PHASE B
IMU FAIL
FAILURE INDICATED IF ANY GIMBAL ERROR SIGNAL IS GREATER THAN 5V RMS OR IF THE 800 CPS OR 3200 CPS VOLTAGE IS LESS THAN 14V RMS
PTA
AGC COMMANDS
TORQUE SET
TORQUE SET RETURN
TORQUE RESET
TORQUE RESET RETURN
56P19 J19
J18
GYRO TORQUE CURRENT TEST POINT
SEE NOTE 1
J16
+120V
BINARY CURRENT SWITCH
SCHEM 2010017
SET
RESET
DUMMY LOAD
GYRO TORQUE
120 V RET.
SEE NOTE 1
SCHEM 20
J14
716Ω
920 Ω
12.5KΩ
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
GYRO CAL
SCHEM 20
X,Y,Z, T± COMMON
56E3
Z IRIG T-
Z IRIG T+
Y IRIG T-
Y IRIG T+
X IRIG T-
X IRIG T+
1:2 STEP UP
SEE NOTE 1
6015564
E2

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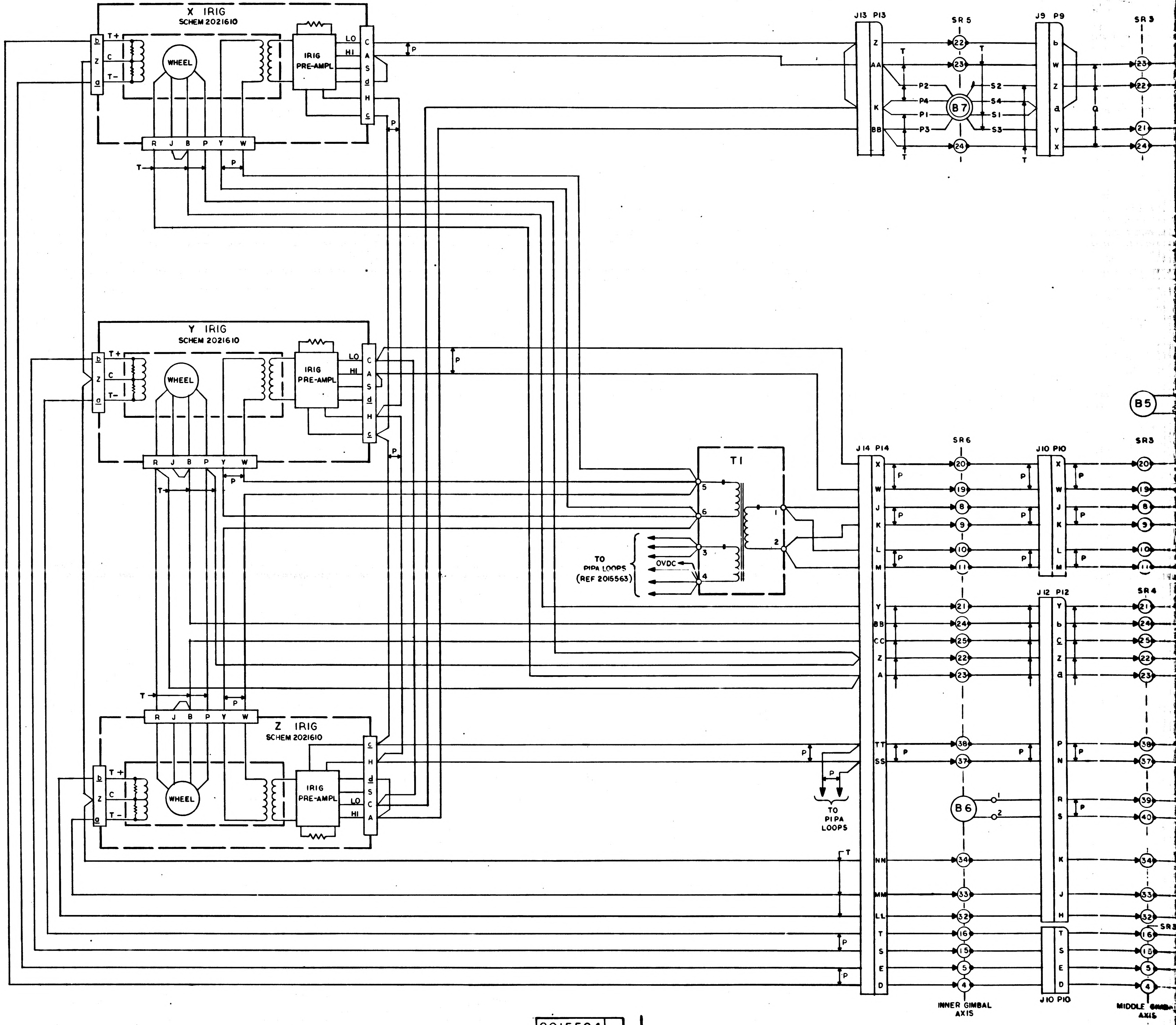
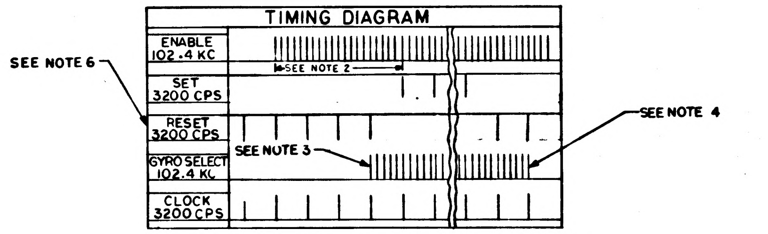
IMU

SCHEM 2018615

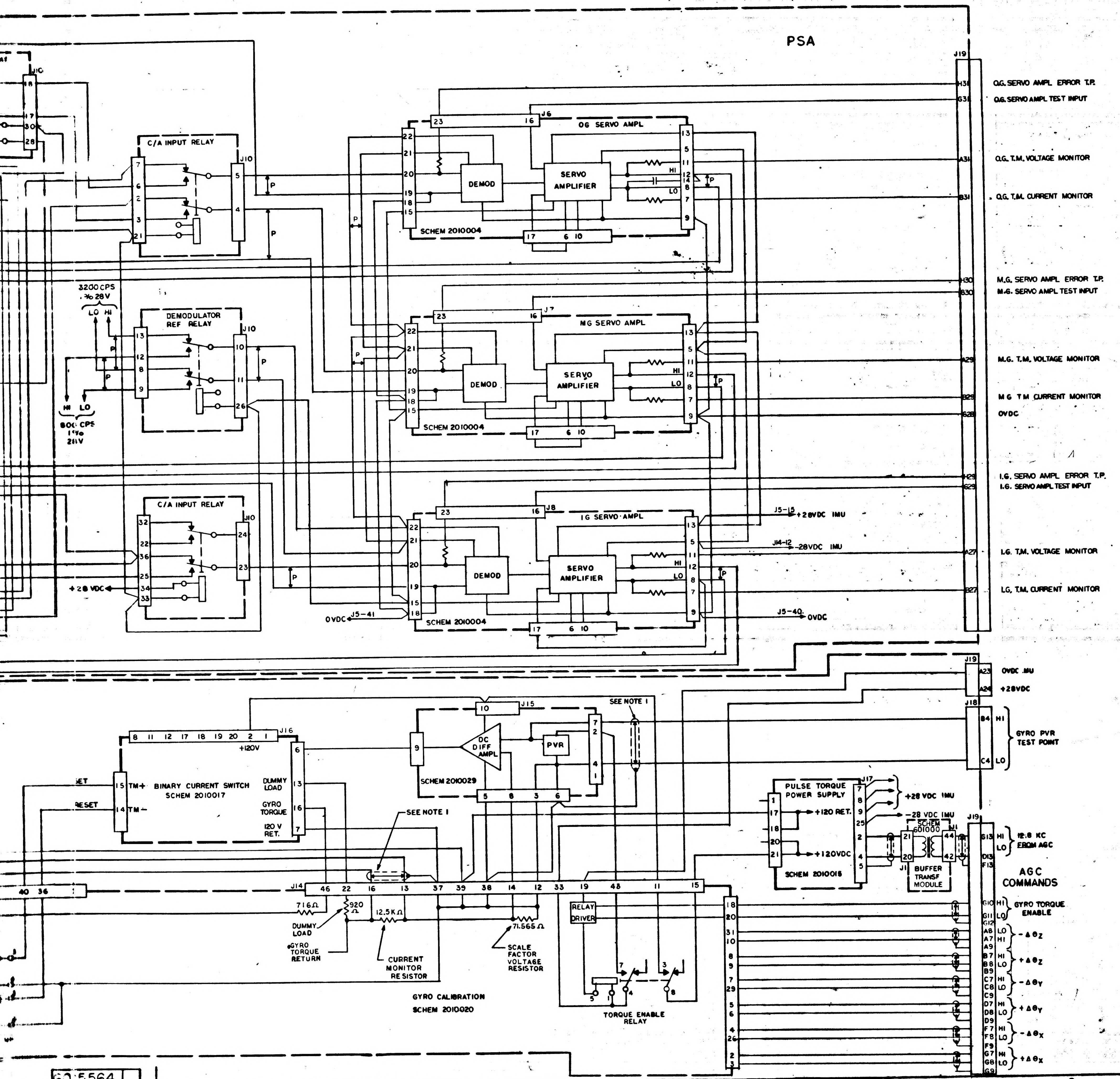

X IRIG
SCHEM 2021610
Y IRIG
SCHEM 2021610
Z IRIG
SCHEM 2021610
WHEEL
IRIG PRE-AMPL
T+
C
T−
LO
HI
R J B P Y W
P
T
T1
TO PIPA LOOPS (REF 2015563)
OVDC
TO PIPA LOOPS
J13 P13
SR 5
J9 P9
SR 3
B7
P2
P4
P1
P3
S2
S4
S1
S3
B5
J14 P14
SR6
J10 P10
SR3
J12 P12
SR 4
B6
INNER GIMBAL AXIS
J10 P10
MIDDLE GIMBAL AXIS

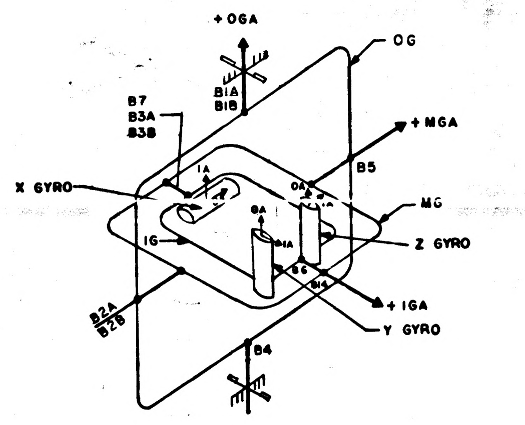

TIMING DIAGRAM
ENABLE 102.4 KC
SEE NOTE 2
SET 3200 CPS
RESET 3200 CPS
GYRO SELECT 102.4 KC
CLOCK 3200 CPS
SEE NOTE 6
SEE NOTE 3
SEE NOTE 4

NOTES:

1. ALL NOTED WIRES TO BE MICRODOT TYPE 2-3938
2. GYRO TORQUE ENABLE SIGNAL MUST BE RECEIVED AT LEAST 20 MILLISECONDS PRIOR TO ANY TORQUE SET PULSE
3. GYRO SELECT SIGNAL MUST BE RECEIVED AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO ANY TORQUE SET PULSES
4. GYRO RESET PULSE MUST BE GIVEN AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO DE-ENERGIZING THE GYRO SELECT SIGNAL LINE
5. ALL INPUTS FROM THE COMPUTER ARE TO BE TWISTED SHIELDED PAIRS
6. CURRENT SWITCH MUST BE IN RESET CONDITION PRIOR TO RECEIVING GYRO TORQUE ENABLE SIGNAL FROM THE COMPUTER
7. A POSITIVE AGC TORQUE COMMAND (+Δθ) SIGNAL PRODUCES TORQUE IN THE TM-WINDING OF THE GYRO RESULTING IN A POSITIVE ROTATION ABOUT THE GYRO INPUT AXIS
8. NO EXTERNAL LEADS SHALL BE CONNECTED TO EITHER THE +20VDC TERMINAL (PIN NO.18) OR TO THE ±20VDC RETURN TERMINAL (PIN NO. 17) ON THE BINARY CURRENT SWITCH
9. ERROR SIGNAL IN PHASE WITH DEMODULATOR REFERENCE RESULTS IN A POSITIVE TORQUE MOTOR VOLTAGE
10. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

	REVISIONS 19980		
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 22303	5-7-66	
B	REVISED PER TDRR 29126	5-24-66	WGA


PSA
C/A INPUT RELAY
J10
J19
O.G. SERVO AMPL ERROR T.P.
O.G. SERVO AMPL TEST INPUT
O.G. T.M. VOLTAGE MONITOR
O.G. T.M. CURRENT MONITOR
M.G. SERVO AMPL ERROR T.P.
M.G. SERVO AMPL TEST INPUT
M.G. T.M. VOLTAGE MONITOR
M G T M CURRENT MONITOR
OVDC
I.G. SERVO AMPL ERROR T.P.
I.G. SERVO AMPL TEST INPUT
I.G. T.M. VOLTAGE MONITOR
I.G. T.M. CURRENT MONITOR
J6
OG SERVO AMPL
J7
MG SERVO AMPL
J8
IG SERVO AMPL
DEMOD
SERVO AMPLIFIER
HI
LO
P
SCHEM 2010004
3200 CPS
.1% 28V
800 CPS
1%
28V
DEMODULATOR REF RELAY
+28 VDC
OVDC J5-41
J5-15 +28VDC IMU
J14-12 -28VDC IMU
J5-40 OVDC
OVDC IMU
+28VDC
J18
GYRO PVR TEST POINT
J16
+120V
SET
RESET
TM+
TM-
BINARY CURRENT SWITCH
SCHEM 2010017
DUMMY LOAD
GYRO TORQUE
120 V RET.
J15
DC DIFF AMPL
PVR
SEE NOTE 1
SCHEM 2010029
PULSE TORQUE POWER SUPPLY
J17
+28 VDC IMU
-28 VDC IMU
+120 RET.
+120VDC
SCHEM 2010015
SCHEM 601000
J1
BUFFER TRANSF MODULE
12.8 KC FROM AGC
AGC COMMANDS
GYRO TORQUE ENABLE
$-\Delta\theta_Z$
$+\Delta\theta_Z$
$-\Delta\theta_Y$
$+\Delta\theta_Y$
$-\Delta\theta_X$
$+\Delta\theta_X$
J14
716Ω
920 Ω
12.5KΩ
71.565 Ω
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
SCALE FACTOR VOLTAGE RESISTOR
RELAY DRIVER
TORQUE ENABLE RELAY
GYRO CALIBRATION
SCHEM 2010020


+OGA
OG
B7
B3A
B3B
B1A
B1B
+MGA
B5
X GYRO
IG
MG
Z GYRO
+IGA
Y GYRO
B2A
B2B
B4

INERTIAL COMPONENT MECHANICAL SCHEM

REF: INTERCONNECT LISTS
FOR PTA HEADER 6014522
FOR PSA HEADER 6014521
FOR WIRE HARNESS A 6014504
FOR WIRE HARNESS B 6014505

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

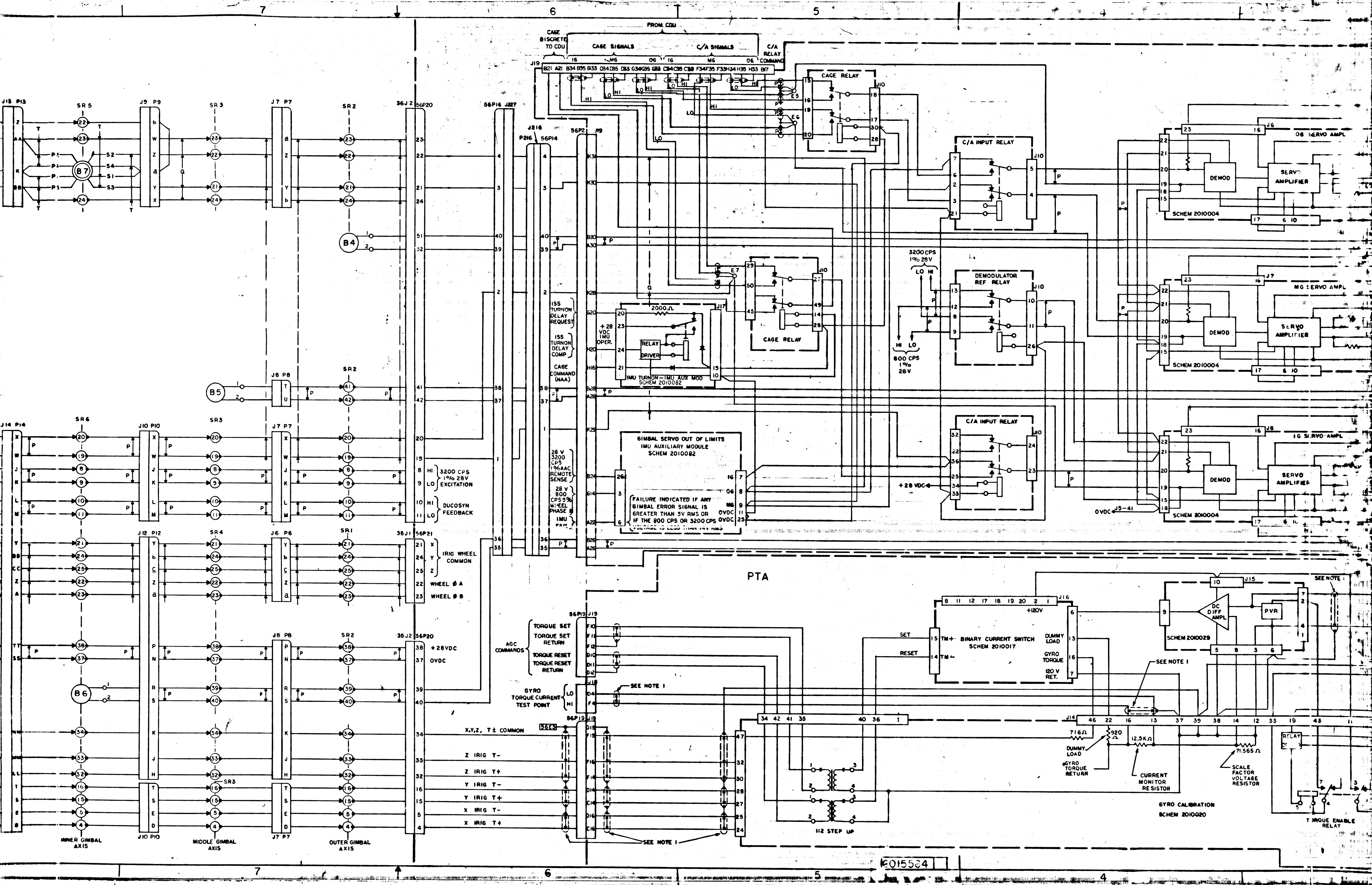
M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN A. D. Leo DATE 7/30
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W. J. R. 6-8-66
MIT APPROVAL 6-2-65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TWO WIRE MECHANIZATION
OF APOLLO STABILIZATION
LOOPS (LEM)

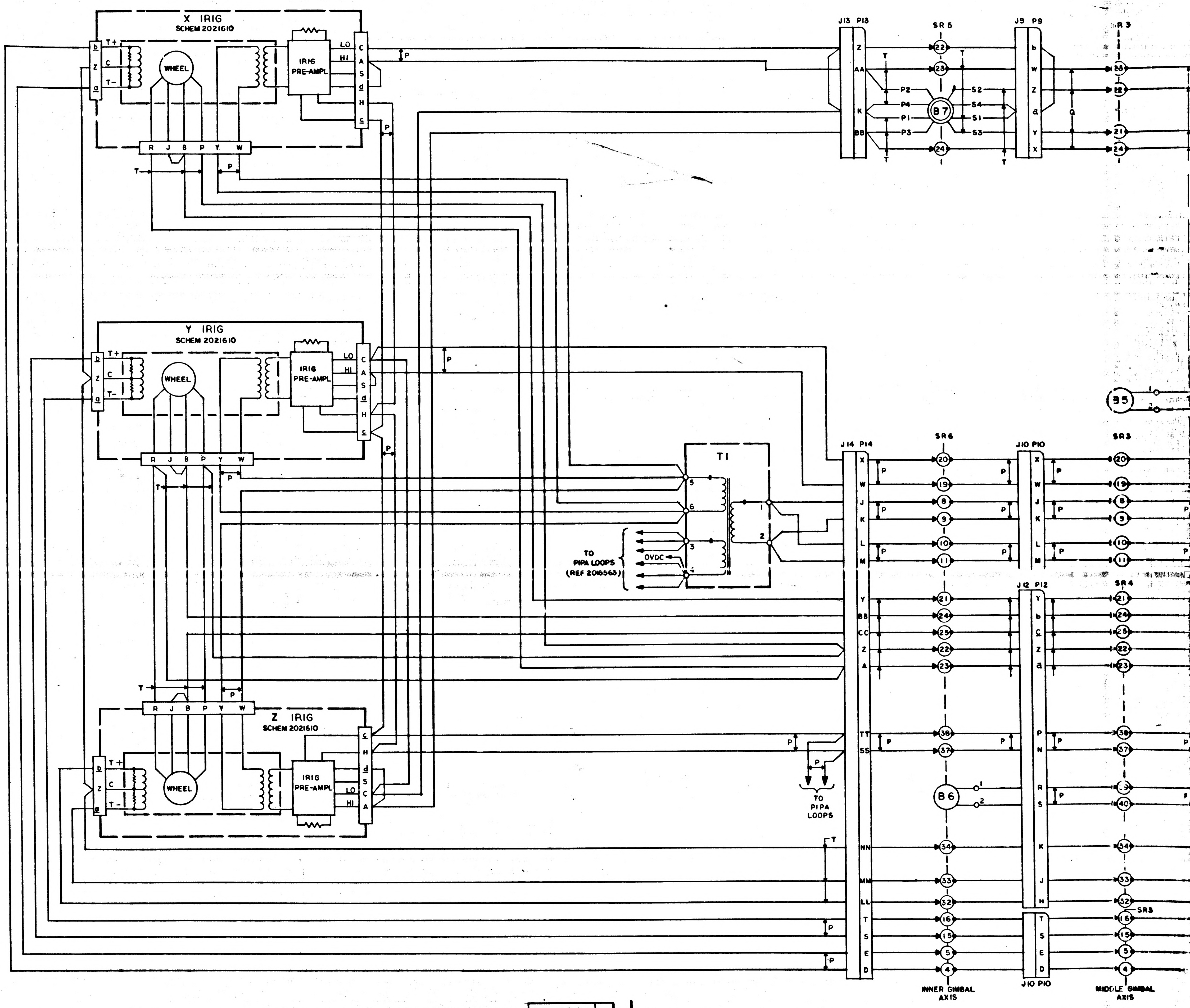
CODE IDENT NO. 80230 SIZE J NASA DRAWING NO. 6015564
SCALE — WT — SHEET 1 OF 1

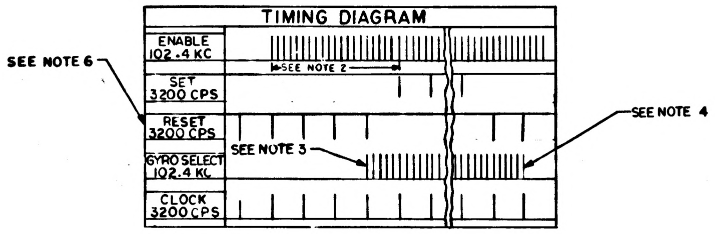
6015564 B


7
6
5
4
FROM CDU
CAGE DISCRETE TO CDU
CAGE SIGNALS
C/A SIGNALS
C/A RELAY COMMAND
J19
B21 A21 B34 B35 B33 D34 D35 D33 G34 G35 G33 C34 C35 C33 F34 F35 F33 H34 H35 H33 B17
16 M6 06 16 M6 06
HI LO
E5
E6
E7
CAGE RELAY
J10
J15 P13
SR5
B7
J9 P9
SR3
J7 P7
SR2
36J2 56P20
56P16 J227
J216
P216 56P14
56P2 J19
B4
B5
J8 P8
C/A INPUT RELAY
DEMOD
SERVO AMPLIFIER
SCHEM 2010004
J6
OG SERVO AMPL
J7
MG SERVO AMPL
J8
IG SERVO AMPL
3200 CPS 1% 28V
LO HI
DEMODULATOR REF RELAY
HI LO
800 CPS 1% 28V
ISS TURNON DELAY REQUEST
ISS TURNON DELAY COMP
CAGE COMMAND (NAA)
+28 VDC IMU OPER.
2000 Ω
RELAY DRIVER
J17
IMU TURNON—IMU AUX MOD SCHEM 2010082
GIMBAL SERVO OUT OF LIMITS IMU AUXILIARY MODULE SCHEM 2010082
FAILURE INDICATED IF ANY GIMBAL ERROR SIGNAL IS GREATER THAN 5V RMS OR IF THE 800 CPS OR 3200 CPS VOLTAGE IS LESS THAN 14V RMS
28 V 3200 CPS 1% AAC REMOTE SENSE
28 V 800 CPS 5% WHEEL PHASE B
IMU FAIL
+28 VDC
OVDC
J5-41
J14 P14
SR6
J10 P10
SR4
J12 P12
J6 P6
SR1
3200 CPS 1% 28V EXCITATION
DUCOSYN FEEDBACK
35J1 56P21
IRIG WHEEL COMMON
WHEEL Ø A
WHEEL Ø B
35J2 56P20
+28VDC
OVDC
B6
INNER GIMBAL AXIS
MIDDLE GIMBAL AXIS
OUTER GIMBAL AXIS
PTA
56P19 J19
AGC COMMANDS
TORQUE SET
TORQUE SET RETURN
TORQUE RESET
TORQUE RESET RETURN
GYRO TORQUE CURRENT TEST POINT
J18
SEE NOTE 1
X,Y,Z, T± COMMON
Z IRIG T−
Z IRIG T+
Y IRIG T−
Y IRIG T+
X IRIG T−
X IRIG T+
1:2 STEP UP
J16
+120V
SET
RESET
BINARY CURRENT SWITCH SCHEM 2010017
DUMMY LOAD
GYRO TORQUE
120 V RET.
J15
DC DIFF AMPL
PVR
SCHEM 2010029
J14
716Ω
920 Ω
12.5KΩ
71.565 Ω
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
SCALE FACTOR VOLTAGE RESISTOR
GYRO CALIBRATION SCHEM 2010020
RELAY
TORQUE ENABLE RELAY
2015564

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

IMU
SCHEM 2018615

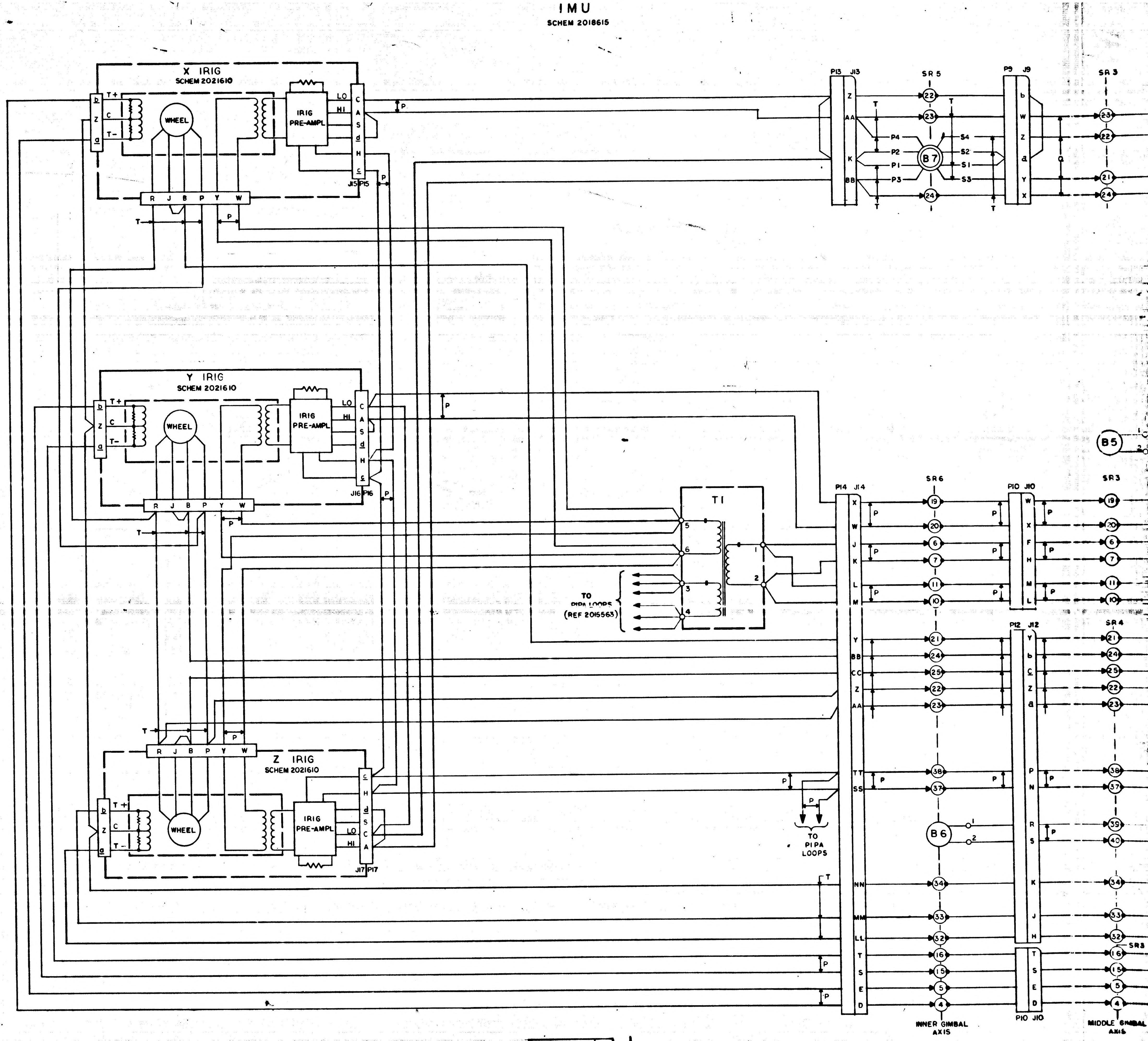

X IRIG
SCHEM 2021610
Y IRIG
SCHEM 2021610
Z IRIG
SCHEM 2021610
WHEEL
IRIG PRE-AMPL
T+
T-
C
LO
HI
R J B P Y W
P
T
J13 P13
SR 5
J9 P9
R 3
B7
P2
P4
P1
P3
S2
S4
S1
S3
Q
B5
T1
J14 P14
SR6
J10 P10
SR3
TO PIPA LOOPS (REF 2016563)
OVDC
J12 P12
SR4
TO PIPA LOOPS
B6
INNER GIMBAL AXIS
J10 P10
MIDDLE GIMBAL AXIS
SR3

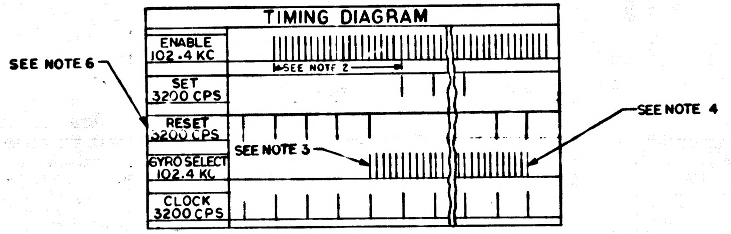

TIMING DIAGRAM
ENABLE 102.4 KC
SET 3200 CPS
RESET 3200 CPS
GYRO SELECT 102.4 KC
CLOCK 3200 CPS
SEE NOTE 6
SEE NOTE 2
SEE NOTE 3
SEE NOTE 4

NOTES:

1. ALL NOTED WIRES TO BE MICRODOT TYPE 2-3938
2. GYRO TORQUE ENABLE SIGNAL MUST BE RECEIVED AT LEAST 20 MILLISECONDS PRIOR TO ANY TORQUE SET PULSE
3. GYRO SELECT SIGNAL MUST BE RECEIVED AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO ANY TORQUE SET PULSES
4. GYRO RESET PULSE MUST BE GIVEN AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO DE-ENERGIZING THE GYRO SELECT SIGNAL LINE
5. ALL INPUTS FROM THE COMPUTER ARE TO BE TWISTED SHIELDED PAIRS
6. CURRENT SWITCH MUST BE IN RESET CONDITION PRIOR TO RECEIVING GYRO TORQUE ENABLE SIGNAL FROM THE COMPUTER
7. A POSITIVE AGC TORQUE COMMAND (+$\Delta\theta$) SIGNAL PRODUCES TORQUE IN THE TM-WINDING OF THE GYRO RESULTING IN A POSITIVE ROTATION ABOUT THE GYRO INPUT AXIS
8. NO EXTERNAL LEADS SHALL BE CONNECTED TO EITHER THE +20VDC TERMINAL (PIN NO.18) OR TO THE ±20VDC RETURN TERMINAL (PIN NO. 17) ON THE BINARY CURRENT SWITCH
9. ERROR SIGNAL IN PHASE WITH DEMODULATOR REFERENCE RESULTS IN A POSITIVE TORQUE MOTOR VOLTAGE
10. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


IMU
SCHEM 2018615
X IRIG
SCHEM 2021610
Y IRIG
SCHEM 2021610
Z IRIG
SCHEM 2021610
WHEEL
IRIG PRE-AMPL
T+
T-
LO
HI
R J B P Y W
J15 P15
J16 P16
J17 P17
T
P
T1
TO PIPA LOOPS (REF 2015563)
TO PIPA LOOPS
P13 J13
SR 5
B7
P4
P2
P1
P3
S4
S2
S1
S3
P9 J9
SR 3
Q
B5
P14 J14
SR6
P10 J10
SR3
P12 J12
SR 4
B6
INNER GIMBAL AXIS
MIDDLE GIMBAL AXIS

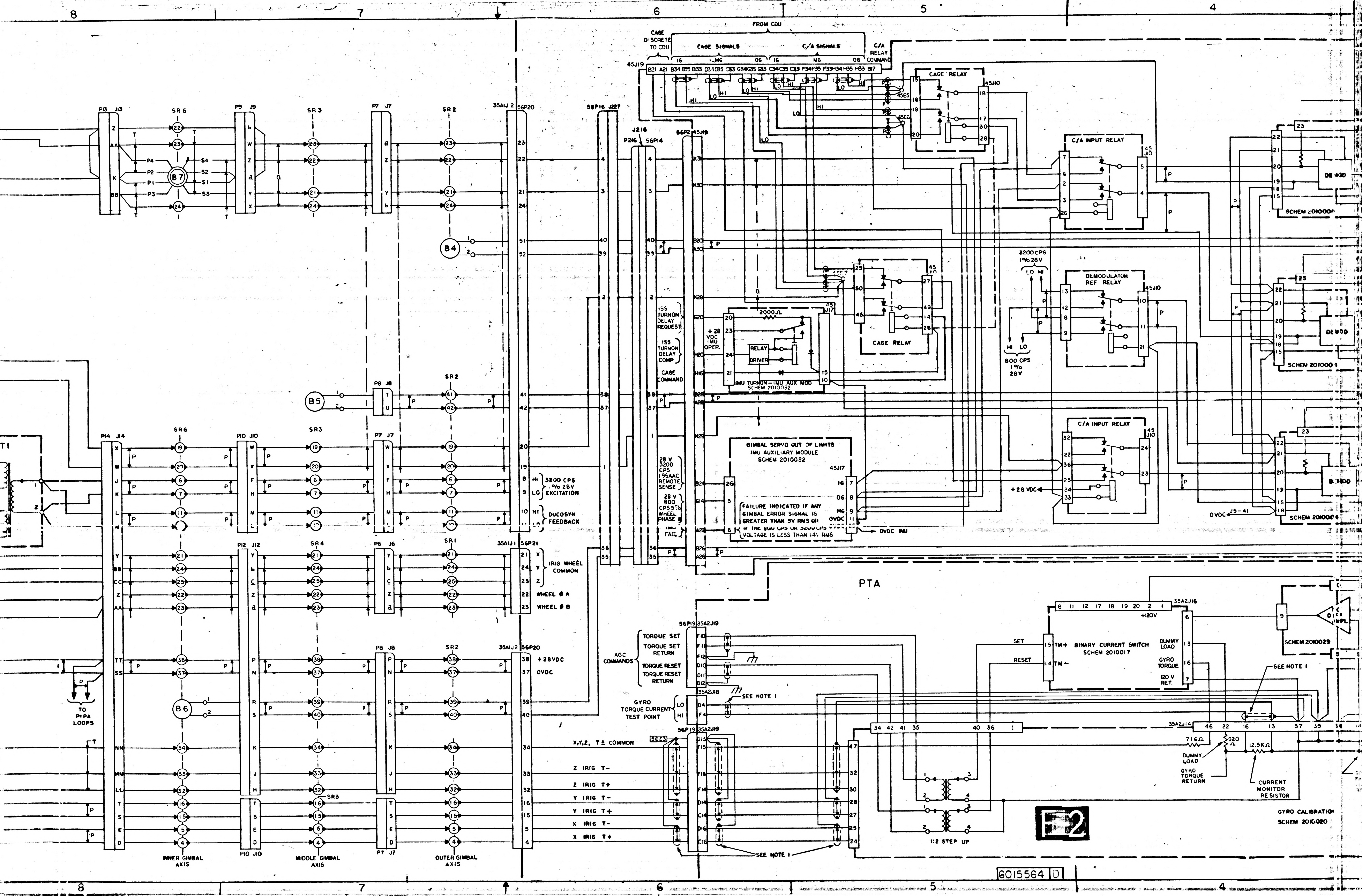

TIMING DIAGRAM
ENABLE 102.4 KC
SEE NOTE 2
SET 3200 CPS
RESET 3200 CPS
GYRO SELECT 102.4 KC
CLOCK 3200 CPS
SEE NOTE 6
SEE NOTE 3
SEE NOTE 4

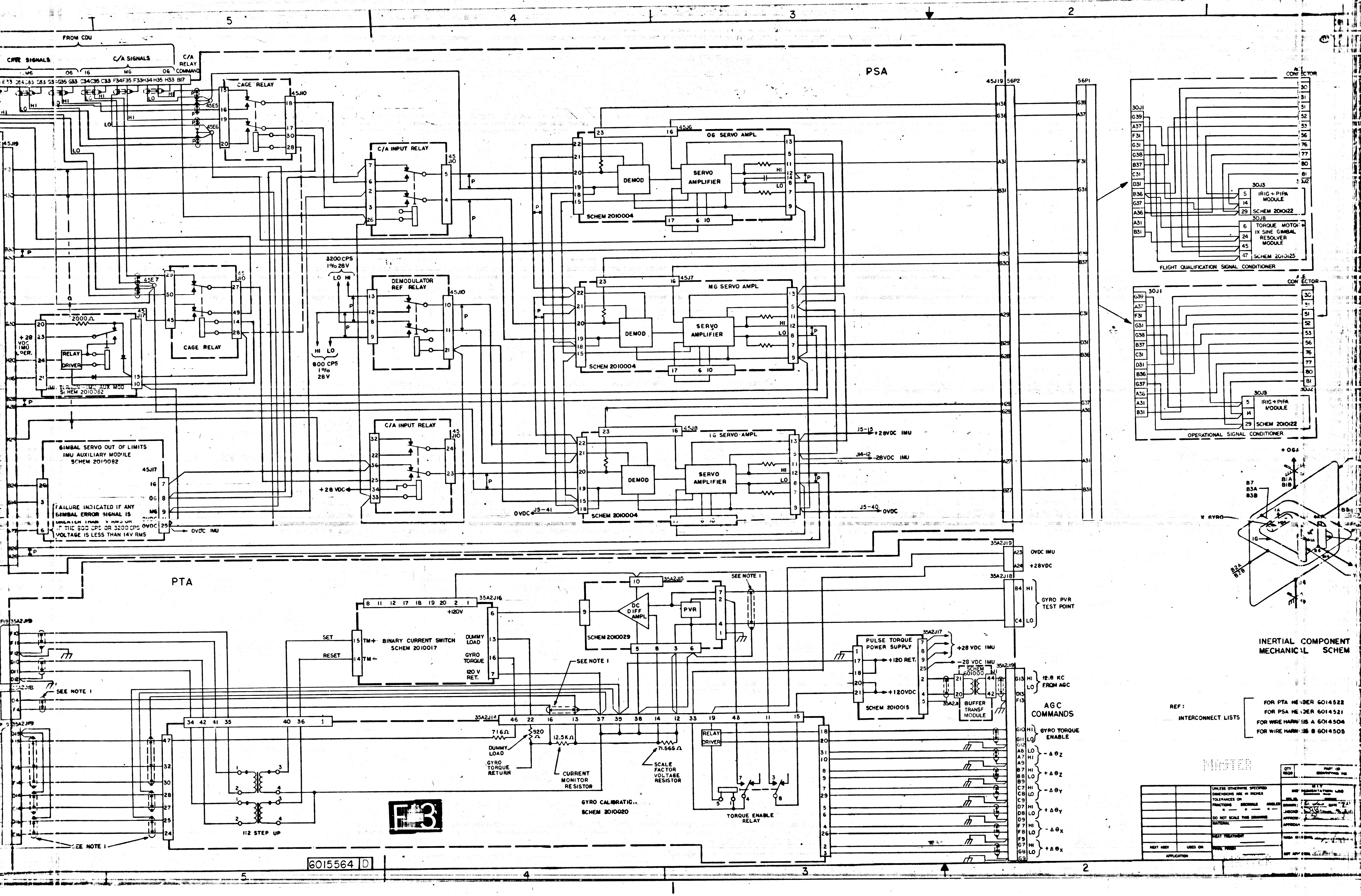
NOTES:

1. ALL NOTED WIRES TO BE MICRODOT TYPE 2-3938
2. GYRO TORQUE ENABLE SIGNAL MUST BE RECEIVED AT LEAST 20 MILLISECONDS PRIOR TO ANY TORQUE SET PULSE
3. GYRO SELECT SIGNAL MUST BE RECEIVED AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO ANY TORQUE SET PULSES
4. GYRO RESET PULSE MUST BE GIVEN AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO DE-ENERGIZING THE GYRO SELECT SIGNAL LINE
5. ALL INPUTS FROM THE COMPUTER ARE TO BE TWISTED SHIELDED PAIRS
6. CURRENT SWITCH MUST BE IN RESET CONDITION PRIOR TO RECEIVING GYRO TORQUE ENABLE SIGNAL FROM THE COMPUTER
7. A POSITIVE AGC TORQUE COMMAND (+Δθ) SIGNAL PRODUCES TORQUE IN THE TM-WINDING OF THE GYRO RESULTING IN A POSITIVE ROTATION ABOUT THE GYRO INPUT AXIS
8. NO EXTERNAL LEADS SHALL BE CONNECTED TO EITHER THE +20VDC TERMINAL (PIN NO. 18) OR TO THE ± 20VDC RETURN TERMINAL (PIN NO. 17) ON THE BINARY CURRENT SWITCH
9. ERROR SIGNAL IN PHASE WITH DEMODULATOR REFERENCE RESULTS IN A POSITIVE TORQUE MOTOR VOLTAGE
10. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3H

F-1


8
7
6
5
4
FROM CDU
CAGE DISCRETE TO CDU
CAGE SIGNALS
C/A SIGNALS
C/A RELAY COMMAND
16
MG
06
45J19
B21 A21 B34 B35 B33 D34 D35 D33 G34 G35 G33 C34 C35 C33 F34 F35 F33 H34 H35 H33 B17
HI
LO
45E5
45E6
45E7
CAGE RELAY
45J10
P13 J13
SR 5
P9 J9
SR 3
P7 J7
SR 2
35A1J 2
56P20
56P16
J227
J216
P216
56P14
56P2
45J19
Z
AA
K
BB
T
P4
P2
P1
P3
B7
S4
S2
S1
S3
b
W
Z
a
Y
X
22
23
21
24
Q
B4
51
52
40
39
K31
K30
B30
A30
K28
G20
H20
H16
B28
A28
K29
B24
G14
A22
B26
A26
C/A INPUT RELAY
45 J10
DE MOD
SCHEM 2010004
3200 CPS 1% 28V
LO HI
800 CPS 1% 28V
DEMODULATOR REF RELAY
SCHEM 2010001
15S TURNON DELAY REQUEST
+28 VDC IMU OPER.
15S TURNON DELAY COMP
CAGE COMMAND
2000Ω
RELAY DRIVER
IMU TURNON-IMU AUX MOD SCHEM 2010082
45 J17
CAGE RELAY
B5
P8 J8
T
U
41
42
38
37
SR 2
T1
P14 J14
SR6
P10 J10
SR3
P7 J7
X
W
J
K
L
M
F
H
19
20
6
7
11
10
8 HI
9 LO
3200 CPS 1% 28V EXCITATION
10 HI
11 LO
DUCOSYN FEEDBACK
GIMBAL SERVO OUT OF LIMITS IMU AUXILIARY MODULE SCHEM 2010082
28 V 3200 CPS 1% AAC REMOTE SENSE
28 V 800 CPS 5% WHEEL PHASE B
IMU FAIL
FAILURE INDICATED IF ANY GIMBAL ERROR SIGNAL IS GREATER THAN 5V RMS OR IF THE 800 CPS OR 3200 CPS VOLTAGE IS LESS THAN 14V RMS
OVDC IMU
C/A INPUT RELAY
+28 VDC
OVDC
J5-41
SCHEM 2010001
P12 J12
SR4
P6 J6
SR1
35A1J1
56P21
Y
BB
CC
Z
AA
25
IRIG WHEEL COMMON
WHEEL ϕ A
WHEEL ϕ B
PTA
TT
SS
TO PIPA LOOPS
P
N
R
S
B6
38 +28VDC
37 OVDC
39
40
NN
MM
LL
T
S
E
D
34
33
32
16
15
5
4
INNER GIMBAL AXIS
P10 J10
MIDDLE GIMBAL AXIS
P7 J7
OUTER GIMBAL AXIS
35A1J2
56P20
AGC COMMANDS
TORQUE SET
TORQUE SET RETURN
TORQUE RESET
TORQUE RESET RETURN
56P19
35A2J19
F10
F11
F12
D10
D11
D12
GYRO TORQUE CURRENT TEST POINT
LO
HI
35A2J18
D4
F4
SEE NOTE 1
X,Y,Z, T± COMMON
56E3
Z IRIG T-
Z IRIG T+
Y IRIG T-
Y IRIG T+
X IRIG T-
X IRIG T+
D15
F15
F16
F14
D14
C14
D16
C16
47
30
28
27
25
24
SEE NOTE 1
34 42 41 35
40 36 1
1:2 STEP UP
8 11 12 17 18 19 20 2 1
35A2J16
+120V
SET
RESET
15 TM+
14 TM-
BINARY CURRENT SWITCH SCHEM 2010017
DUMMY LOAD
GYRO TORQUE
120 V RET.
13
16
7
6
DIFF AMPL
9
SCHEM 2010029
SEE NOTE 1
35A2J14
46 22 16 13 37 39 38
716Ω
920 Ω
12.5KΩ
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
GYRO CALIBRATIO
SCHEM 2010020
E2
6015564 D



5
4
3
2
FROM CDU
C/A SIGNALS
C/A RELAY COMMAND
CAGE RELAY
45J10
PSA
45J19
56P2
56P1
C/A INPUT RELAY
OG SERVO AMPL
MG SERVO AMPL
IG SERVO AMPL
DEMOD
SERVO AMPLIFIER
SCHEM 2010004
45J6
45J7
45J8
HI
LO
P
3200 CPS 1% 28V
DEMODULATOR REF RELAY
800 CPS 1% 28V
+28 VDC IMU OPER.
RELAY DRIVER
2000 Ω
45J17
IMU TURNON IMU AUX MOD SCHEM 2010082
CAGE RELAY
45E7
GIMBAL SERVO OUT OF LIMITS IMU AUXILIARY MODULE SCHEM 2010082
FAILURE INDICATED IF ANY GIMBAL ERROR SIGNAL IS GREATER THAN 4 RMS OR IF THE 800 CPS OR 3200 CPS VOLTAGE IS LESS THAN 14V RMS
0VDC IMU
+28 VDC
0VDC
J5-41
J5-15 +28VDC IMU
J14-12 -28VDC IMU
J5-40 0VDC
30J1
30J3
IRIG + PIPA MODULE
SCHEM 2010122
30J8
TORQUE MOTOR + 1X SINE GIMBAL RESOLVER MODULE
SCHEM 2010125
FLIGHT QUALIFICATION SIGNAL CONDITIONER
OPERATIONAL SIGNAL CONDITIONER
AE CONNECTOR
+OGA
X GYRO
IG
MG
OG
PTA
35A2J19
0VDC IMU
+28VDC
35A2J18
GYRO PVR TEST POINT
35A2J16
+120V
BINARY CURRENT SWITCH SCHEM 2010017
SET
RESET
DUMMY LOAD
GYRO TORQUE
120 V RET.
35A2J15
DC DIFF AMPL
PVR
SCHEM 2010029
SEE NOTE 1
35A2J14
716 Ω
920 Ω
12.5K Ω
71.565 Ω
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
SCALE FACTOR VOLTAGE RESISTOR
GYRO CALIBRATION SCHEM 2010020
RELAY DRIVER
TORQUE ENABLE RELAY
1:2 STEP UP
PULSE TORQUE POWER SUPPLY
SCHEM 2010015
35A2J17
+28 VDC IMU
+120 RET.
-28 VDC IMU
+120VDC
SCHEM 601000
BUFFER TRANSF MODULE
35A2J11
12.8 KC FROM AGC
AGC COMMANDS
GYRO TORQUE ENABLE
-Δθz
+Δθz
-Δθy
+Δθy
-Δθx
+Δθx
F3

INERTIAL COMPONENT MECHANICAL SCHEM

REF:

INTERCONNECT LISTS
FOR PTA HEADER 6014522
FOR PSA HEADER 6014521
FOR WIRE HARNESS A 6014504
FOR WIRE HARNESS B 6014505

MASTER

6015564 D

QTY REQD | PART OR IDENTIFYING NO

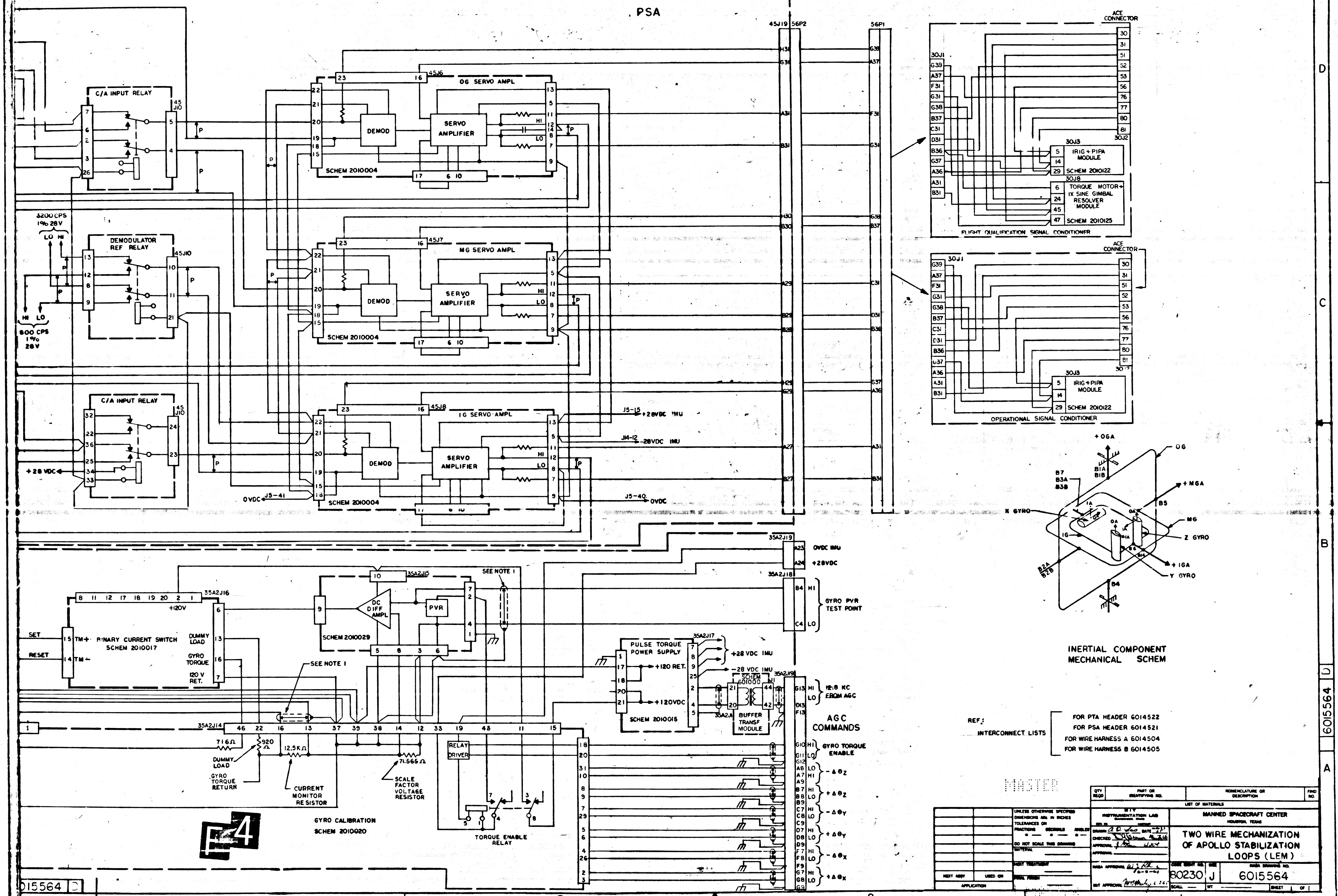
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

NEXT ASSY | USED ON
APPLICATION

MIT INSTRUMENTATION LAB
DRAWN
CHECKED
APPROVED
APPROVED
NASA APPROVAL
MIT APPROVAL

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 22303	9-5-65	[illegible]
B	REVISED PER TDRR 24126	5-24-66	[illegible]
C	REVISED PER TDRR 30667	8-23-66	
D	REVISED PER TDRR 33299	3/13/67	[illegible]

REVISIONS 19970


PSA
C/A INPUT RELAY
45 J10
DEMODULATOR REF RELAY
3200 CPS 1% 28V
LO HI
HI LO
800 CPS 1% 28V
+28 VDC
OG SERVO AMPL
MG SERVO AMPL
IG SERVO AMPL
45J6
45J7
45J8
DEMOD
SERVO AMPLIFIER
SCHEM 2010004
HI
LO
P
J5-15 +28VDC IMU
J14-12 -28VDC IMU
J5-41 0VDC
J5-40 0VDC
45J19
56P2
56P1
ACE CONNECTOR
30J1
30J2
30J3
30J8
IRIG + PIPA MODULE
SCHEM 2010122
TORQUE MOTOR + 1X SINE GIMBAL RESOLVER MODULE
SCHEM 2010125
FLIGHT QUALIFICATION SIGNAL CONDITIONER
OPERATIONAL SIGNAL CONDITIONER
+OGA
OG
+MGA
MG
X GYRO
Z GYRO
Y GYRO
+IGA
IG
B7 B3A B3B
B1A B1B
B2A B2B
B4
B5
INERTIAL COMPONENT MECHANICAL SCHEM
35A2J19
0VDC IMU
+28VDC
35A2J18
GYRO PVR TEST POINT
35A2J16
+120V
BINARY CURRENT SWITCH SCHEM 2010017
SET
RESET
TM+
TM-
DUMMY LOAD
GYRO TORQUE
120 V RET.
35A2J15
DC DIFF AMPL
PVR
SCHEM 2010029
SEE NOTE 1
PULSE TORQUE POWER SUPPLY
35A2J17
+28 VDC IMU
-28 VDC IMU
+120 RET.
+120VDC
SCHEM 2010015
SCHEM 601000
BUFFER TRANSF MODULE
12.8 KC FROM AGC
AGC COMMANDS
35A2J14
716Ω
920 Ω
12.5KΩ
71.565 Ω
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
SCALE FACTOR VOLTAGE RESISTOR
RELAY DRIVER
TORQUE ENABLE RELAY
GYRO CALIBRATION SCHEM 2010020
GYRO TORQUE ENABLE
-ΔθZ
+ΔθZ
-ΔθY
+ΔθY
-ΔθX
+ΔθX
E-4
3A
015564 D
6015564 D

REF:
INTERCONNECT LISTS
FOR PTA HEADER 6014522
FOR PSA HEADER 6014521
FOR WIRE HARNESS A 6014504
FOR WIRE HARNESS B 6014505

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

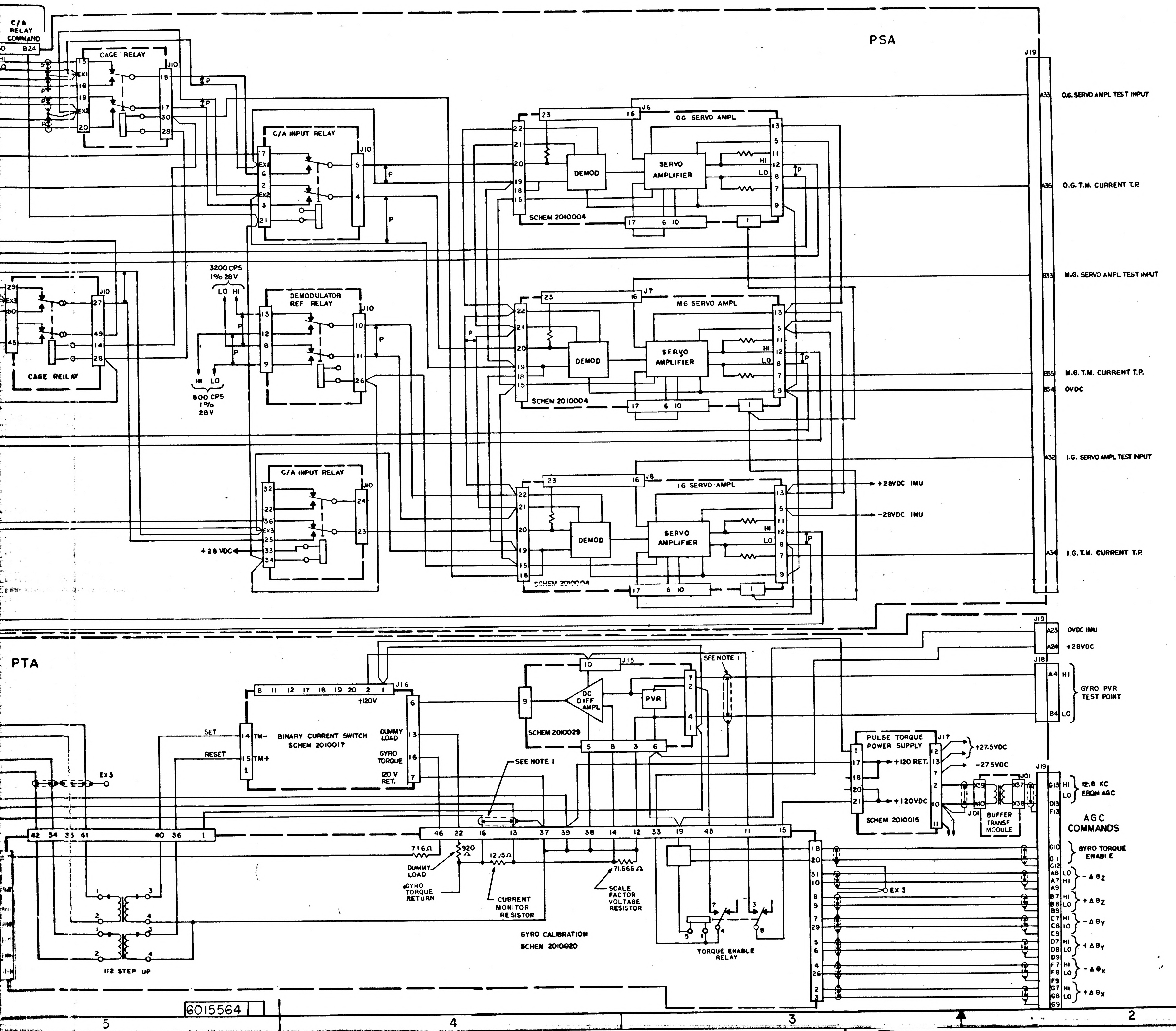
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

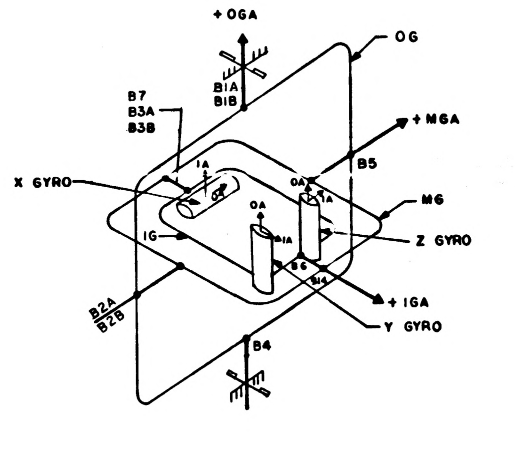
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN A D Lao DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W J R
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TWO WIRE MECHANIZATION
OF APOLLO STABILIZATION
LOOPS (LEM)

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 6015564
SCALE —
WT
SHEET 1 OF 1


PSA
C/A RELAY COMMAND
B24
CAGE RELAY
EX1
EX2
J10
P
C/A INPUT RELAY
OG SERVO AMPL
J6
DEMOD
SERVO AMPLIFIER
HI
LO
SCHEM 2010004
MG SERVO AMPL
J7
IG SERVO AMPL
J8
3200 CPS 1% 28V
LO HI
DEMODULATOR REF RELAY
HI LO
800 CPS 1% 28V
CAGE RELAY
EX3
+28 VDC
+28VDC IMU
-28VDC IMU
J19
A33 O.G. SERVO AMPL TEST INPUT
A35 O.G. T.M. CURRENT T.P.
B33 M.G. SERVO AMPL TEST INPUT
B35 M.G. T.M. CURRENT T.P.
B34 OVDC
A32 I.G. SERVO AMPL TEST INPUT
A34 I.G. T.M. CURRENT T.P.
A23 OVDC IMU
A24 +28VDC
J18
A4 HI
B4 LO
GYRO PVR TEST POINT
PTA
J16
+120V
BINARY CURRENT SWITCH SCHEM 2010017
SET
RESET
TM-
TM+
DUMMY LOAD
GYRO TORQUE
120 V RET.
J15
DC DIFF AMPL
PVR
SCHEM 2010029
SEE NOTE 1
EX3
716Ω
920 Ω
12.5Ω
71.565 Ω
DUMMY LOAD
GYRO TORQUE RETURN
CURRENT MONITOR RESISTOR
SCALE FACTOR VOLTAGE RESISTOR
GYRO CALIBRATION SCHEM 2010020
1:2 STEP UP
TORQUE ENABLE RELAY
PULSE TORQUE POWER SUPPLY
J17
+27.5VDC
-27.5VDC
+120 RET.
+120VDC
SCHEM 2010015
J01
X39
X40
X37
X38
BUFFER TRANSF MODULE
G13 HI
D13 LO
12.8 KC FROM AGC
AGC COMMANDS
G10 G11 GYRO TORQUE ENABLE
A8 LO A7 HI -Δθz
B7 HI B8 LO +Δθz
C7 HI C8 LO -Δθy
D7 HI D8 LO +Δθy
F7 HI F8 LO -Δθx
G7 HI G8 LO +Δθx
EX 3


+OGA
OG
B7
B3A
B3B
B1A
B1B
+MGA
X GYRO
B5
MG
IA
OA
IG
Z GYRO
B6
B2A
B2B
+IGA
Y GYRO
B4

INERTIAL COMPONENT MECHANICAL SCHEM

REVISIONS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN A. D. Lao DATE May 17 '65
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W. J. R. 6-2-65
MIT APPROVAL W. McMurphy 6-2-65

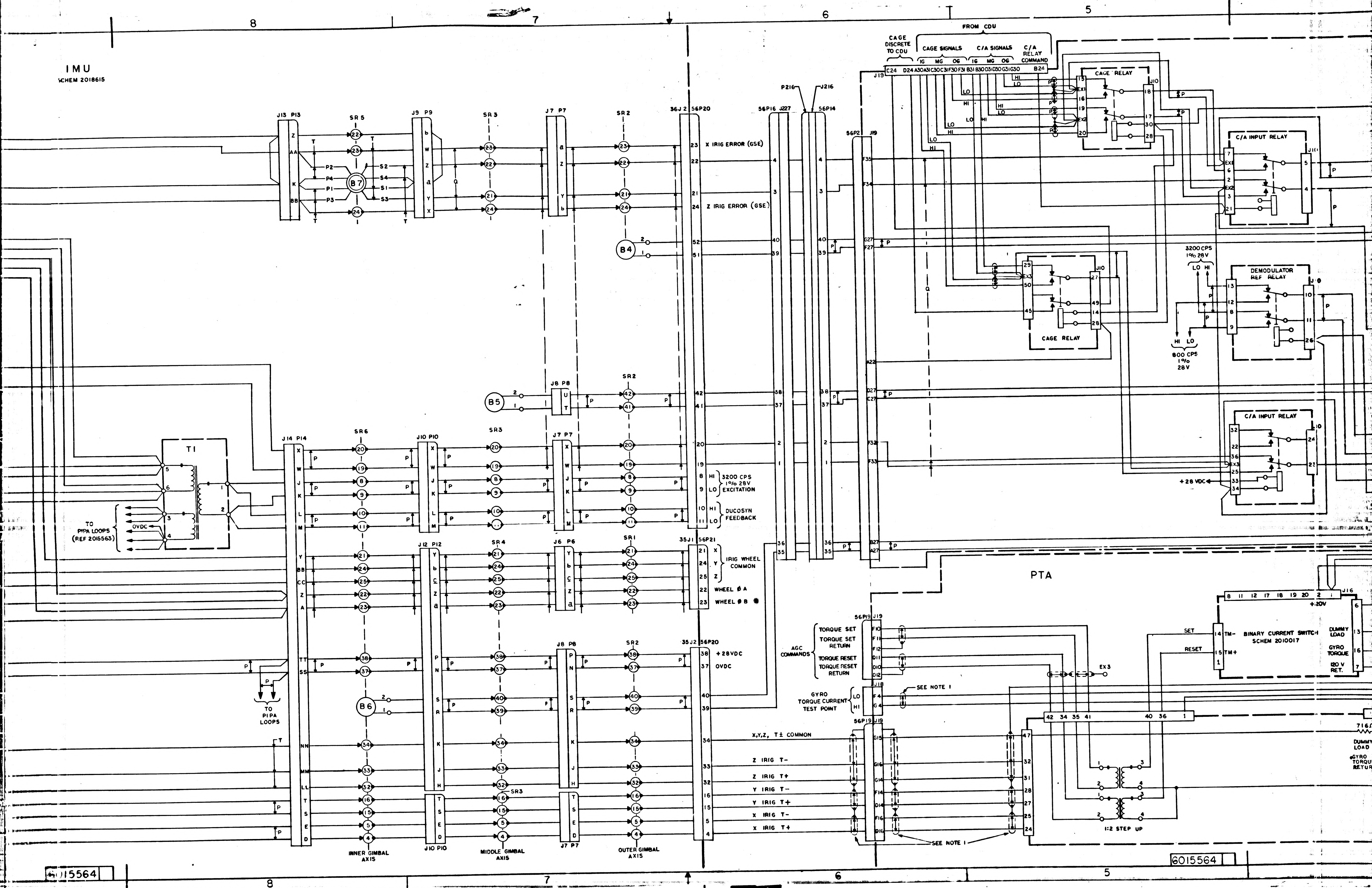
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TWO WIRE MECHANIZATION
OF APOLLO STABILIZATION
LOOPS (LEM)

CODE IDENT NO. 80230 SIZE J NASA DRAWING NO. 6015564
SCALE — WT — SHEET 1 OF 1

6015564

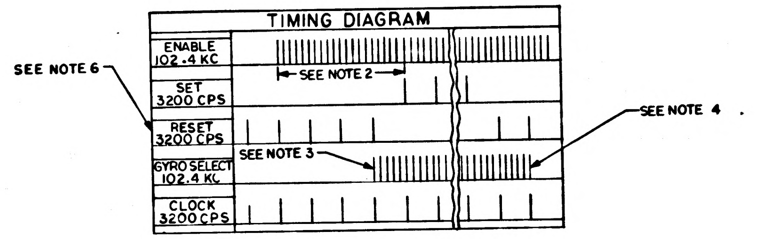
MASTER

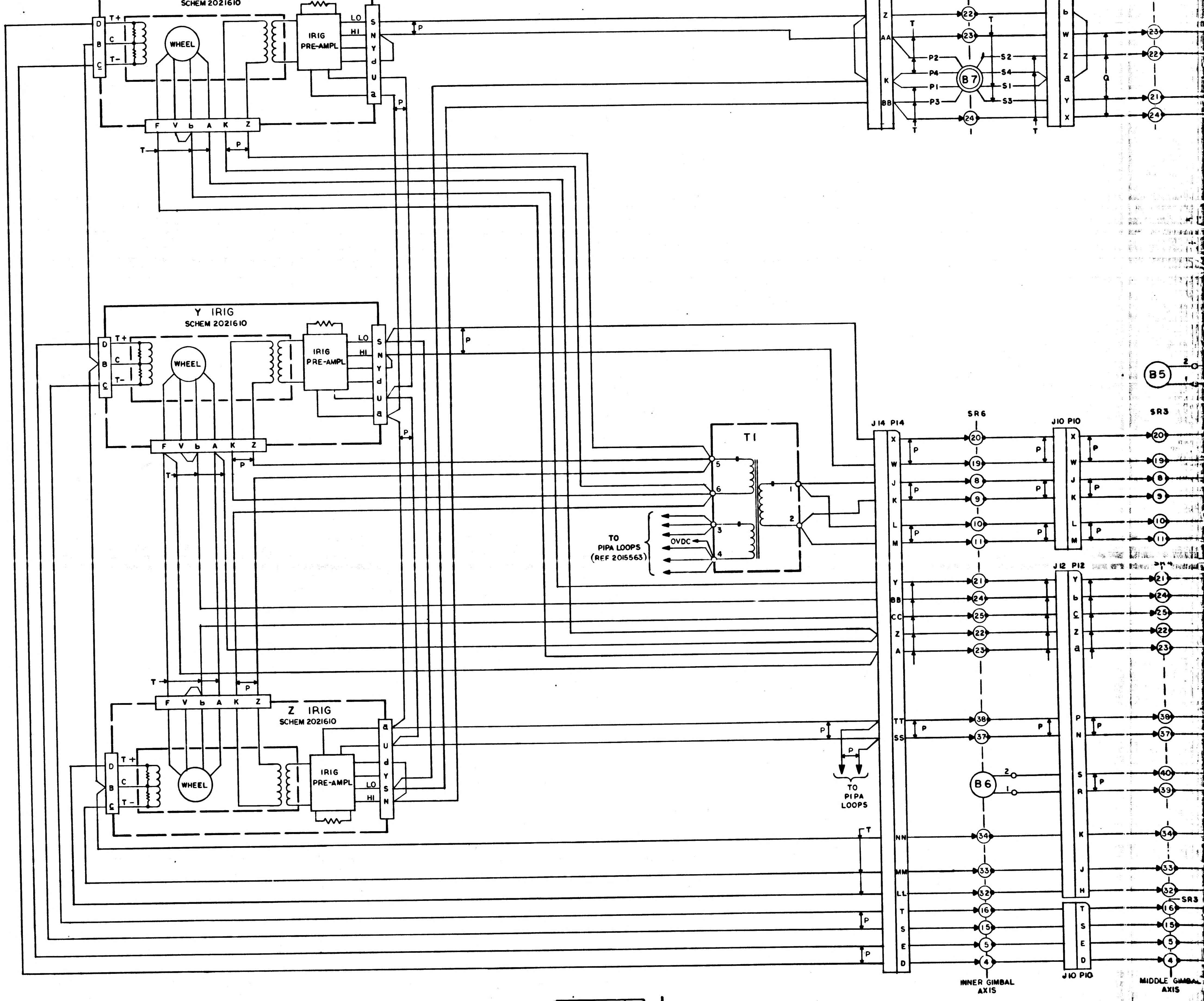


IMU
SCHEM 2018615
J13 P13
SR 5
B7
J9 P9
SR 3
J7 P7
SR 2
B4
36J 2 56P20
X IRIG ERROR (GSE)
Z IRIG ERROR (GSE)
56P16 J227
P216
J216
56P14
56P2 J19
CAGE DISCRETE TO CDU
FROM CDU
CAGE SIGNALS
C/A SIGNALS
C/A RELAY COMMAND
IG MG OG IG MG OG
C24 D24 A30 A31 C30 C31 F30 F31 B31 B30 D31 D30 G31 G30 B24
CAGE RELAY
C/A INPUT RELAY
DEMODULATOR REF RELAY
3200 CPS 1% 28V
800 CPS 1% 28V
+28 VDC
J8 P8
B5
T1
TO PIPA LOOPS (REF 2015563)
OVDC
J14 P14
SR6
J10 P10
SR3
SR4
J6 P6
SR1
J12 P12
3200 CPS 1% 28V EXCITATION
DUCOSYN FEEDBACK
35J1 56P21
IRIG WHEEL COMMON
WHEEL ØA
WHEEL ØB
35J2 56P20
+28VDC
OVDC
B6
TO PIPA LOOPS
X,Y,Z, T± COMMON
Z IRIG T−
Z IRIG T+
Y IRIG T−
Y IRIG T+
X IRIG T−
X IRIG T+
INNER GIMBAL AXIS
MIDDLE GIMBAL AXIS
OUTER GIMBAL AXIS
PTA
56P19 J19
AGC COMMANDS
TORQUE SET
TORQUE SET RETURN
TORQUE RESET
TORQUE RESET RETURN
J18
GYRO TORQUE CURRENT TEST POINT
SEE NOTE 1
EX3
SET
RESET
BINARY CURRENT SWITCH SCHEM 2010017
J16
+20V
DUMMY LOAD
GYRO TORQUE
120 V RET.
1:2 STEP UP
716
GYRO TORQUE RETURN
8 7 6 5
6015564
F2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

IMU
SCHEM 2018615


TIMING DIAGRAM
ENABLE 102.4 KC
SET 3200 CPS
RESET 3200 CPS
GYRO SELECT 102.4 KC
CLOCK 3200 CPS
SEE NOTE 6
SEE NOTE 2
SEE NOTE 3
SEE NOTE 4


X IRIG
SCHEM 2021610
Y IRIG
SCHEM 2021610
Z IRIG
SCHEM 2021610
WHEEL
IRIG PRE-AMPL
LO
HI
T+
C
T-
D
B
C
S
N
Y
d
U
a
F
V
b
A
K
Z
T
P
T1
5
6
3
4
1
2
OVDC
TO PIPA LOOPS (REF 2015563)
TO PIPA LOOPS
J13 P13
SR 5
B7
P2
P4
P1
P3
S2
S4
S1
S3
Q
J9 P9
SR 3
B5
J14 P14
SR6
J10 P10
J12 P12
B6
INNER GIMBAL AXIS
J10 P10
MIDDLE GIMBAL AXIS

NOTES:

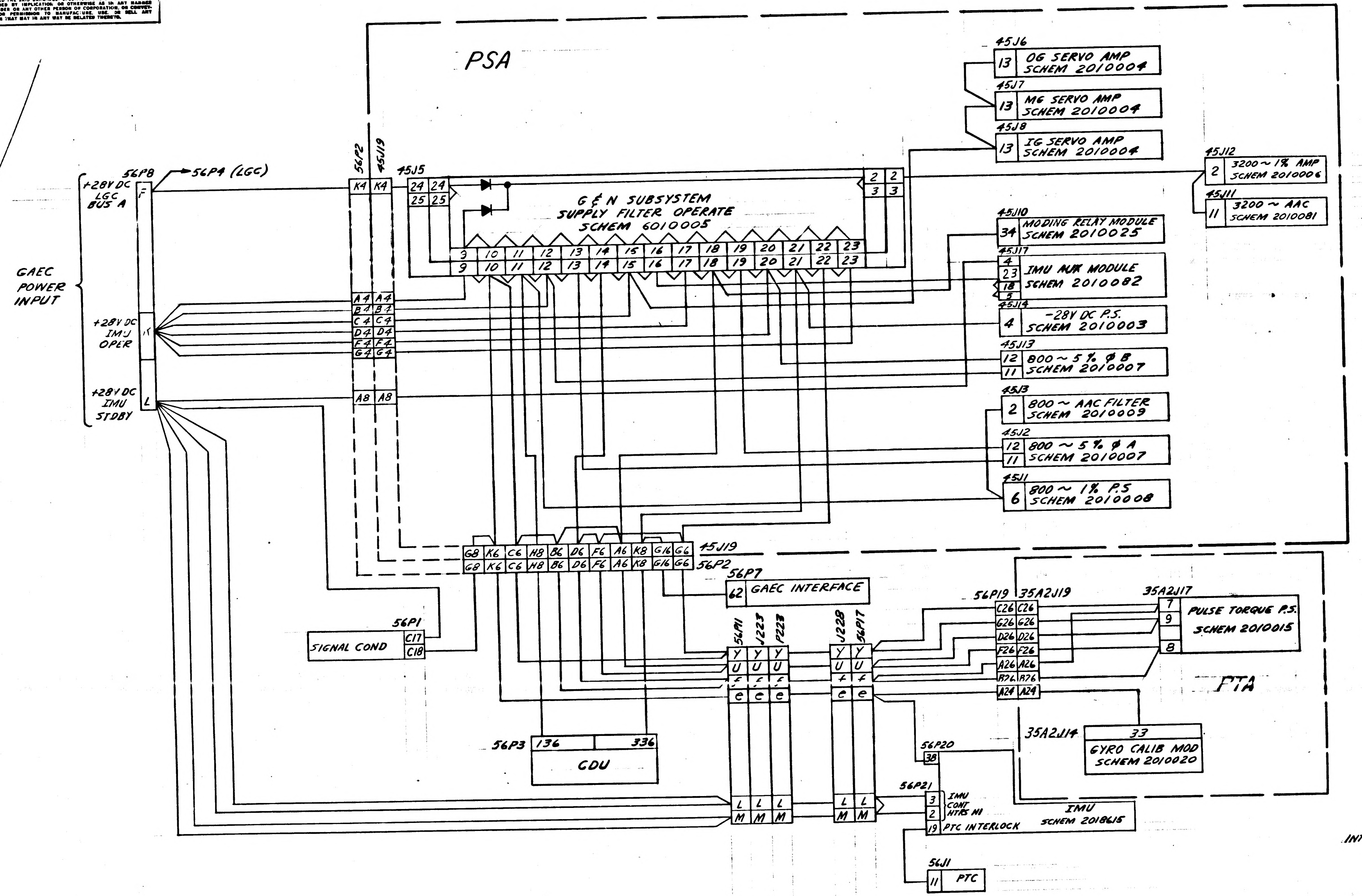
1. ALL NOTED WIRES TO BE MICRODOT TYPE 2-3938
2. GYRO TORQUE ENABLE SIGNAL MUST BE RECEIVED AT LEAST 20 MILLISECONDS PRIOR TO ANY TORQUE SET PULSE
3. GYRO SELECT SIGNAL MUST BE RECEIVED AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO ANY TORQUE SET PULSES
4. GYRO RESET PULSE MUST BE GIVEN AT LEAST ONE CLOCK TIME (3200 CPS) PRIOR TO DE-ENERGIZING THE GYRO SELECT SIGNAL LINE
5. ALL INPUTS FROM THE COMPUTER ARE TO BE TWISTED SHIELDED PAIRS
6. CURRENT SWITCH MUST BE IN RESET CONDITION PRIOR TO RECEIVING GYRO TORQUE ENABLE SIGNAL FROM THE COMPUTER
7. A POSITIVE AGC TORQUE COMMAND ($+\Delta\theta$) SIGNAL PRODUCES TORQUE IN THE TM-WINDING OF THE GYRO RESULTING IN A POSITIVE ROTATION ABOUT THE GYRO INPUT AXIS
8. NO EXTERNAL LEADS SHALL BE CONNECTED TO EITHER THE +20VDC TERMINAL (PIN NO.18) OR TO THE ± 20VDC RETURN TERMINAL (PIN NO. 17) ON THE BINARY CURRENT SWITCH
9. ERROR-SIGNAL IN PHASE WITH DEMODULATOR REFERENCE RESULTS IN A POSITIVE TORQUE MOTOR VOLTAGE
10. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

6015564

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 24544

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED


PSA
GAEC POWER INPUT
+28V DC LGC BUS A
+28V DC IMU OPER
+28V DC IMU STDBY
56P8
F
K
L
56P4 (LGC)
56P2
45J19
K4
A4
B4
C4
D4
F4
G4
A8
45J5
24
25
G & N SUBSYSTEM SUPPLY FILTER OPERATE SCHEM 6010005
3
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
2
3
45J6
13 OG SERVO AMP SCHEM 2010004
45J7
13 MG SERVO AMP SCHEM 2010004
45J8
13 IG SERVO AMP SCHEM 2010004
45J12
2 3200 ~ 1% AMP SCHEM 2010006
45J11
11 3200 ~ AAC SCHEM 2010081
45J10
34 MODING RELAY MODULE SCHEM 2010025
45J17
4
23
18
5
IMU AUX MODULE SCHEM 2010082
45J14
4 −28V DC P.S. SCHEM 2010003
45J13
12
11
800 ~ 5% φ B SCHEM 2010007
45J3
2 800 ~ AAC FILTER SCHEM 2010009
45J2
12
11
800 ~ 5% φ A SCHEM 2010007
45J1
6 800 ~ 1% P.S SCHEM 2010008
G8 K6 C6 H8 B6 D6 F6 A6 K8 G16 G6
45J19
56P2
56P7
62 GAEC INTERFACE
56P1
SIGNAL COND
C17
C18
56P11
J223
P223
J228
56P17
Y
U
f
e
L
M
56P3
136
336
CDU
56P19
35A2J19
C26
G26
D26
F26
A26
B26
A24
35A2J17
7
9
8
PULSE TORQUE P.S. SCHEM 2010015
PTA
35A2J14
33
GYRO CALIB MOD SCHEM 2010020
56P20
38
56P21
3
2
IMU CONT HTRS HI
19 PTC INTERLOCK
IMU SCHEM 2018615
56J1
11 PTC

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN THENO 8-5-65
CHECKED 8-10-65
APPROVED 11-1-65
APPROVED
APPROVED MIT 27Oct65
APPROVED MSC A. C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

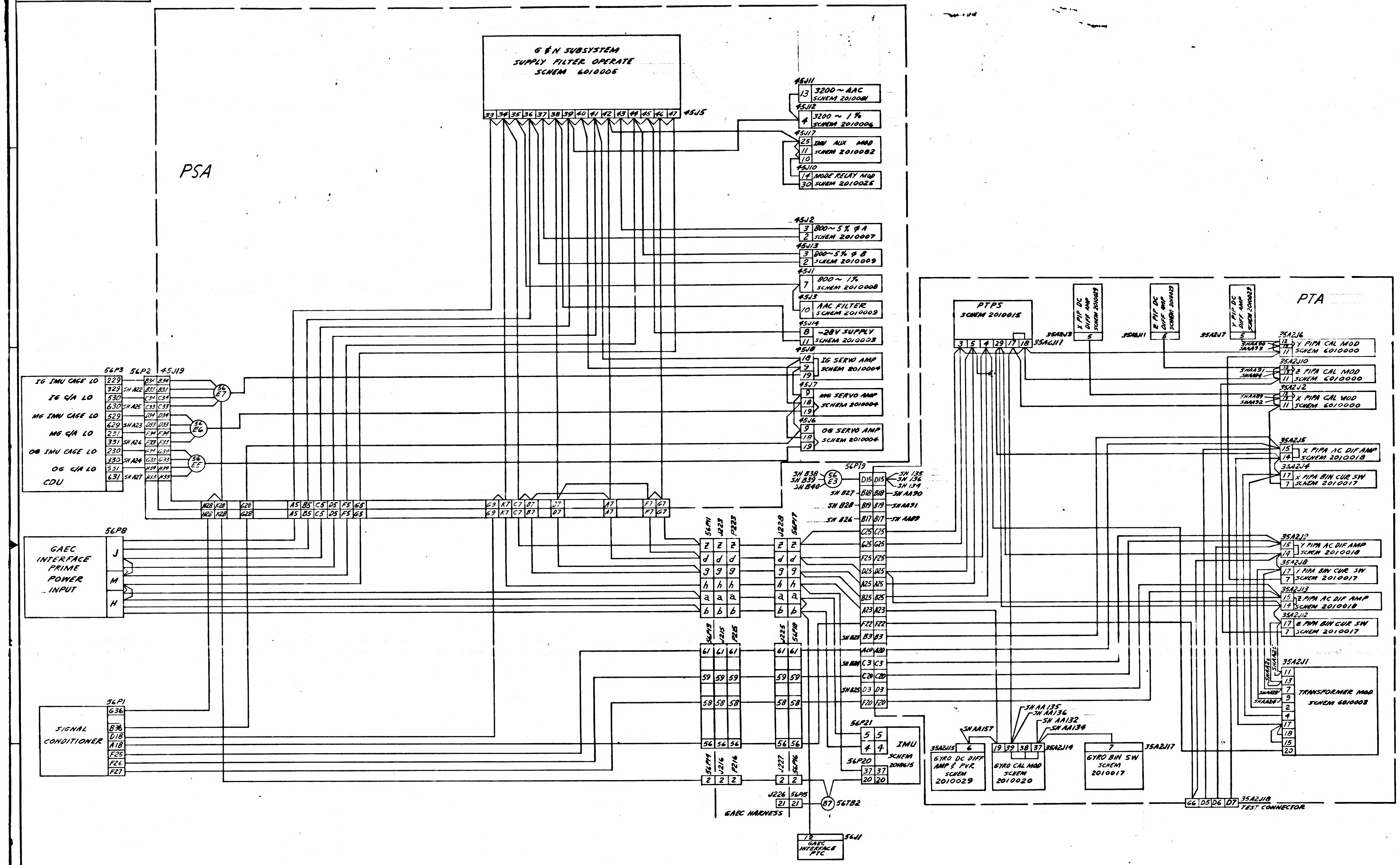
LEM +28V DC
POWER DISTRIBUTION

CODE IDENT NO.
SIZE D
DRAWING NO. 6015570
SCALE
SHEET 1 OF 1

MASTER

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 24544						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED


PSA
G & N SUBSYSTEM SUPPLY FILTER OPERATE SCHEM 6010006
45J5
45J11 3200 ~ AAC SCHEM 2010081
45J12 3200 ~ 1% SCHEM 2010006
45J17 IMU AUX MOD SCHEM 2010082
45J10 MODE RELAY MOD SCHEM 2010026
45J2 800 ~ 5% ⌀A SCHEM 2010007
45J13 800 ~ 5% ⌀B SCHEM 2010009
45J1 800 ~ 1% SCHEM 2010008
45J3 AAC FILTER SCHEM 2010009
45J14 -28V SUPPLY SCHEM 2010003
45J8 IG SERVO AMP SCHEM 2010004
45J7 MG SERVO AMP SCHEM 2010004
45J6 OG SERVO AMP SCHEM 2010004
56P3 56P2 45J19
IG IMU CAGE LO
IG C/A LO
MG IMU CAGE LO
MG C/A LO
OG IMU CAGE LO
OG C/A LO
CDU
56PB
GAEC INTERFACE PRIME POWER INPUT
56P1
SIGNAL CONDITIONER
PTA
PTPS SCHEM 2010015
X PIP DC DIFF AMP SCHEM 2010029
Z PIP DC DIFF AMP SCHEM 2010029
Y PIP DC DIFF AMP SCHEM 2010029
35A2J6 Y PIPA CAL MOD SCHEM 6010000
35A2J10 Z PIPA CAL MOD SCHEM 6010000
35A2J2 X PIPA CAL MOD SCHEM 6010000
35A2J5 X PIPA AC DIF AMP SCHEM 2010018
35A2J4 X PIPA BIN CUR SW SCHEM 2010017
35A2J9 Y PIPA AC DIF AMP SCHEM 2010018
35A2J8 Y PIPA BIN CUR SW SCHEM 2010017
35A2J13 Z PIPA AC DIF AMP SCHEM 2010018
35A2J12 Z PIPA BIN CUR SW SCHEM 2010017
35A2J1 TRANSFORMER MOD SCHEM 6010002
56P19 56P17 56P11
56P21 IMU SCHEM 2010615
56P20
35A2J15 GYRO DC DIFF AMP & PVR SCHEM 2010029
GYRO CAL MOD SCHEM 2010020
35A2J14
GYRO BIN SW SCHEM 2010017
35A2J17
35A2J18 TEST CONNECTOR
56TB2
GAEC HARNESS
56J1 GAEC INTERFACE PTC

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN THENO 9-10-65
CHECKED D. J. Brown 8-30-65
APPROVED 11-1-65
APPROVED
APPROVED MIT W. Kopfer
A. C. Metzger
APPROVED MSC
DATE

LEM
0V DC DISTRIBUTION

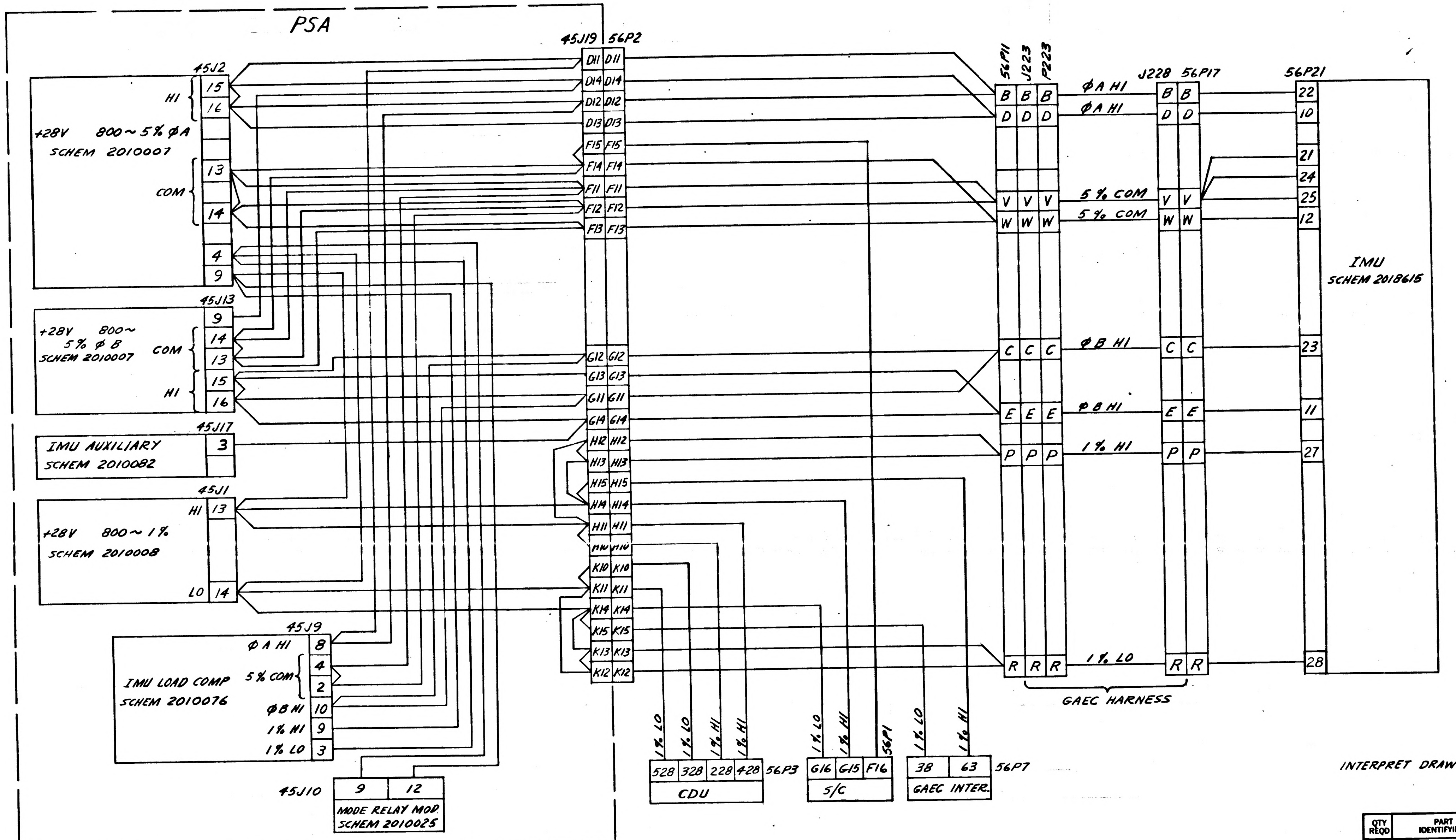
CODE IDENT NO.
SIZE E
DRAWING NO. 6015571
SCALE
SHEET 1 OF 1

MASTER

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 24544

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED


PSA
45J2
HI
15
16
+28V 800~5% ΦA
SCHEM 2010007
13
COM
14
4
9
45J13
9
+28V 800~
5% Φ B
SCHEM 2010007
COM
14
13
15
HI
16
45J17
IMU AUXILIARY
SCHEM 2010082
3
45J1
HI
13
+28V 800~1%
SCHEM 2010008
LO
14
45J9
ΦA HI
8
4
IMU LOAD COMP
SCHEM 2010076
5% COM
2
ΦB HI
10
1% HI
9
1% LO
3
45J10
9
12
MODE RELAY MOD
SCHEM 2010025
45J19
56P2
D11 D11
D14 D14
D12 D12
D13 D13
F15 F15
F14 F14
F11 F11
F12 F12
F13 F13
G12 G12
G13 G13
G11 G11
G14 G14
H12 H12
H13 H13
H15 H15
H14 H14
H11 H11
H10 H10
K10 K10
K11 K11
K14 K14
K15 K15
K13 K13
K12 K12
1% LO
1% LO
1% HI
1% HI
528
328
228
428
56P3
CDU
1% LO
1% HI
G16
G15
F16
56P1
S/C
1% LO
1% HI
38
63
56P7
GAEC INTER.
56P11
J223
P223
B B B
D D D
V V V
W W W
C C C
E E E
P P P
R R R
ΦA HI
ΦA HI
5% COM
5% COM
ΦB HI
ΦB HI
1% HI
1% LO
GAEC HARNESS
J228
56P17
B B
D D
V V
W W
C C
E E
P P
R R
56P21
22
10
21
24
25
12
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28
IMU
SCHEM 2018615

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN THENO 8-6-65
CHECKED S. Brown 8-10-65
APPROVED
APPROVED
APPROVED MIT W Kupfer
A. C. METZGER
APPROVED MSC
DATE

LEM

+28V 800 ~ POWER DISTR.

CODE IDENT NO.
SIZE D
DRAWING NO. 6015572
SCALE
SHEET 1 OF 1

MASTER

6015572

APOLLO/LEM G&N Specification
PS 6016161 Rev. A
Original Issue Date: 6-21-66
Release Authority: TDRR 29798
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
10-31-66	A	31920	1, 2, 13	M. M.	N. A.

This specification consists of page 1 to 16 inclusive.

APPROVALS	* NASA/MSC	MIT/IL	
		6-21-66 6-21-66	(EL) C

* subject to MIT/IL approval

APOLLO/LEM G&N Specification
PS 6016161 Rev. A
Original Issue Date: 6-21-66
Release Authority: TDRR 29798
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
10-31-6	A	31920	1, 2, 13	M. M.	N.A.

This specification consists of page 1 to 16 Inclusive.

APPROVALS	NASA/MSC	6-21-66 6-21-66 MIT/IL	(Sr) KC

* subject to MIT/IL approval

1 SCOPE

1-1 PURPOSE. This specification establishes the detail requirements for complete identification and acceptance of the LEM Alignment Optical Telescope, Part No. 6011000-021 and 6011000-031.

1-2 PRODUCT CONFIGURATION AND BASELINE ACCEPTANCES

1-2.1 The product configuration baseline shall be established by FACI of the LEM Alignment Optical Telescope, Serial No.   . This unit and all subsequent units regardless of intended use shall be accepted to the configuration defined by Serial No.   unless formally approved otherwise as required by ANA Bulletin No. 445.

2 APPLICABLE DOCUMENTS

2-1 EFFECTIVE ISSUES. The following documents form a part of this specification to the extent specified herein.

2-1.1 Unless otherwise specified herein, Military and Government Standards and Specifications shall be the issue in effect on the date of request for proposal or invitation to bid.

SPECIFICATIONS

APOLLO G AND N

ND 1002214	General Specification for Preservation Packaging, Packing and Container Marking of Apollo Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment.
ND 1002023	Serialization, General Specification for

STANDARDS

Military

FED-STD-209	Clean Room and Work Station Requirements, Controlled Environment

4-2.6.2 Reticle Lighting. Reticle lamp operation shall be determined by means of their current drain and visual check. The current shall be measured by means of a ammeter when 5.0 VAC is applied. The current drain shall be within 5% of the current measurements previously made while the lamp illumination could be observed and a visual check will be performed to show that the reticle appears illuminated when viewed via the eyepiece.

4-2.6.3 Freedom of Viewing. With the reticle lamps illuminated, the reticle pattern shall be observed through the AOT eyepiece and checked for clear visibility along all lines of sight within the field of view of the AOT.

4-2.6.4 Eyepiece Focus. The focus adjustment of the AOT eyepiece shall be measured by means of a dioptometer. With the AOT eyepiece focus adjustment positioned to its CW limit, the focusing power shall be measured by sighting on the AOT reticle through the dioptometer. The AOT eyepiece shall then be positioned to its CCW limit and the focusing power shall be measured again. The minimum range between the two readings observed shall be no less than from -1.70 to +1.50 diopters.

4-2.6.5 System Focus. System focus of the AOT shall be measured by means of a dioptometer and not less than 0.20 inch dia. aperture stop. The 45° target star is positioned 15° in the field (21° turntable reading). With the dioptometer set to 0 diopters the AOT eyepiece shall be adjusted to bring the reticle at 15° into optimum focus. Rotating the dioptometer barrel, the 45° target star shall be brought into optimum focus. The difference between the two readings shall not exceed 0.1 diopters.

4-2.6.6 Resolution. Resolution of the AOT shall be verified by means of observing a high contrast black and white target through the AOT eyepiece. With the AOT eyepiece adjusted for optimum focus and the center of the AOT reticle superimposed on the center of the resolution target, the number of the smallest pattern that can be resolved with a dioptometer shall be recorded. This procedure shall be repeated with the center of the resolution target postioned 10°, 20°, and 28° from the center of the AOT reticle. When converted to arc seconds, the pattern numbers recorded shall not exceed the tolerance specified in paragraph 3-1.6 for each field angle.

APOLLO/LEM G&N Specification
PS 6016161 Rev. A
Original Issue Date: 6-21-66
Release Authority: TDRR 29798
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
10-31-66	A	31920	1, 2, 13	M. M.	N.A.
10-2-67	B	34708	2	M. M.	N.A.

This specification consists of page 1 to 16 inclusive.

APPROVALS	* NASA/MSC		6-21-66 MIT/IL	6-21-66	G. Stearns KC

* subject to MIT/IL approval.

1 SCOPE

1-1 PURPOSE. This specification establishes the detail requirements for complete identification and acceptance of the LEM Alignment Optical Telescope, Part No. 6011000-021, 6011000-031 and 6011000-032.

1-2 PRODUCT CONFIGURATION AND BASELINE ACCEPTANCES

1-2.1 The product configuration baseline shall be established by FACI of the LEM Alignment Optical Telescope, Serial No.   . This unit and all subsequent units regardless of intended use shall be accepted to the configuration defined by Serial No.   unless formally approved otherwise as required by ANA Bulletin No. 445.

2 APPLICABLE DOCUMENTS

2-1 EFFECTIVE ISSUES. The following documents form a part of this specification to the extent specified herein.

2-1.1 Unless otherwise specified herein, Military and Government Standards and Specifications shall be the issue in effect on the date of request for proposal or invitation to bid.

SPECIFICATIONS

APOLLO G AND N

ND 1002214	General Specification for Preservation Packaging, Packing and Container Marking of Apollo Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment.
ND 1002023	Serialization, General Specification for

STANDARDS

Military

FED-STD-209	Clean Room and Work Station Requirements, Controlled Environment

APOLLO/LEM G&N Specification
PS 6016162 Rev. - A
Original Issue Date: 12/1/66
Release Authority: TDRR 32253
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
6-30-67	A	34097	1, 2	MM	NB

This specification consists of page 1 to 17 inclusive.

APPROVALS	NASA/MSC	G.W.K. 12/2/66 MIT/IL	KIC

1 SCOPE

1-1 PURPOSE. This specification establishes the detail requirements for complete identification and acceptance of the LEM Alignment Optical Telescope, Part No. 6011000-041, 6011000-042, 6011000-043, 6011000-051, 6011000-061 and 6011000-071.

1-2 PRODUCT CONFIGURATION AND BASELINE ACCEPTANCES

1-2.1 The product configuration baseline shall be established by FACI of the LEM Alignment Optical Telescope, Serial No.   . This unit and all subsequent units regardless of intended use shall be accepted to the configuration defined by Serial No.   unless formally approved otherwise as required by ANA Bulletin No. 445.

2 APPLICABLE DOCUMENTS

2-1 EFFECTIVE ISSUES. The following documents form a part of this specification to the extent specified herein.

2-1.1 Unless otherwise specified herein, Military and Government Standards and Specifications shall be the issue in effect on the date of request for proposal or invitation to bid.

SPECIFICATIONS

APOLLO G AND N

ND 1002214	General Specification for Preservation Packaging, Packing and Container Marking of Apollo Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment.
ND 1002023	Serialization, General Specification for

STANDARDS

Military

FED-STD-209	Clean Room and Work Station Requirements, Controlled' Environment
MIL-STD-150A	Photographic Lenses
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts

APOLLO/LEM G&N Specification
PS 6016162 Rev. -
Original Issue Date: 12/1/66
Release Authority: TDRR 32253
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
6-30-67	A	34097	1, 2	MM	NR
8-30-67	B	34393	4, 7, 14	JWM	NR

This specification consists of page 1 to 17 Inclusive.

APPROVALS	NASA/MSC	MIT/IL	KIC

APOLLO/LEM G&N Specification
PS 6016162 Rev. -
Original Issue Date: 12/1/66
Release Authority: TDRR 32253
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
6-30-67	A	34097	1, 2	MM	NR
8-30-67	B	34393	4, 7, 14	JWM	NR
10-2-67	C	34794	2	MM	NR

This specification consists of page 1 to 17 inclusive.

APPROVALS	NASA/MSC	MIT/IL	KIC

1 SCOPE

1-1 PURPOSE. This specification establishes the detail requirements for complete identification and acceptance of the LEM Alignment Optical Telescope, Part No. 6011000-041, 6011000-042, 6011000-043, 6011000-051, 6011000-061, 6011000-062 and 6011000-071.

1-2 PRODUCT CONFIGURATION AND BASELINE ACCEPTANCES

1-2.1 The product configuration baseline shall be established by FACI of the LEM Alignment Optical Telescope, Serial No. . This unit and all subsequent units regardless of intended use shall be accepted to the configuration defined by Serial No. unless formally approved otherwise as required by ANA Bulletin No. 445.

2 APPLICABLE DOCUMENTS

2-1 EFFECTIVE ISSUES. The following documents form a part of this specification to the extent specified herein.

2-1.1 Unless otherwise specified herein, Military and Government Standards and Specifications shall be the issue in effect on the date of request for proposal or invitation to bid.

SPECIFICATIONS

APOLLO G AND N

ND 1002214	General Specification for Preservation Packaging, Packing and Container Marking of Apollo Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment.
ND 1002023	Serialization, General Specification for

STANDARDS

Military

FED-STD-209	Clean Room and Work Station Requirements, Controlled Environment
MIL-STD-150A	Photographic Lenses
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts

APOLLO/LEM G&N Specification
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Original Issue Date: 12/1/66
Release Authority: TDRR 32253
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
6-30-67	A	34097	1, 2	MM	NR
8-30-67	B	34393	4, 7, 14	JWM	NR
10-2-67	C	34794	2	MM	NR
12-4-67	D	35191	2	MM	NR

This specification consists of page 1 to 17 inclusive.

APPROVALS	NASA/MSC	MIT/IL	KIC

APOLLO/LEM G&N Specification
PS 6016162 Rev. -
Original Issue Date: 12/1/66
Release Authority: TDRR 32253
Class A Release

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS

LEM ALIGNMENT OPTICAL TELESCOPE

DRAWING NO. 6011000

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 17 Inclusive.

17

APPROVALS	NASA/MSC	G.W.K. 11/28/66 MIT/IL	KIC

1 SCOPE

1-1 PURPOSE. This specification establishes the detail requirements for complete identification and acceptance of the LEM Alignment Optical Telescope, Part No. 6011000-041, 6011000-051 & 6011000-061. .

1-2 PRODUCT CONFIGURATION AND BASELINE ACCEPTANCES

1-2.1 The product configuration baseline shall be established by FACI of the LEM Alignment Optical Telescope, Serial No. . This unit and all subsequent units regardless of intended use shall be accepted to the configuration defined by Serial No. unless formally approved otherwise as required by ANA Bulletin No. 445.

2 APPLICABLE DOCUMENTS

2-1 EFFECTIVE ISSUES. The following documents form a part of this specification to the extent specified herein.

2-1.1 Unless otherwise specified herein, Military and Government Standards and Specifications shall be the issue in effect on the date of request for proposal or invitation to bid.

SPECIFICATIONS

APOLLO G AND N

ND 1002214	General Specification for Preservation Packaging, Packing and Container Marking of Apollo Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment.
ND 1002023	Serialization, General Specification for

STANDARDS

Military

FED-STD-209	Clean Room and Work Station Requirements, Controlled Environment
MIL-STD-150A	Photographic Lenses
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts

3-1.5 System Focus. The reticle plane and star image plane shall be coincident within 0.1 diopters.

3-1.6 Resolution. Resolution for all lines of sight of the AOT shall be as follows with the eyepiece adjusted for optimum focus using high contrast black and white targets as defined by MIL-STD-150A:

Approximate Field Angle	Maximum Resolution in arc seconds
Center	50
10^{o}	60
20^{o}	122
28^{o}	300

3-1.7 Reticle Eccentricity. The center of the reticle pattern shall be coincident to the axis of rotation of the reticle assembly bearing within .0002 inch (20 arc seconds).

3-1.8 Star Line of Sight. The Star Line of Sight (LOS), located at the center of the telescope field defined by the reticle at 0^{o} counter reading, shall be nominally fixed at 45^{o} in elevation over three positions in azimuth. The LOS elevation angle for each azimuth detent position shall be measured with respect to the alignment reference features of the AOT as shown in Figure 1. The azimuth detent positions shall be nominally 0^{o} (F), $+ 60^{o}$ (R), and -60^{o} (L) with respect to the same reference features. The azimuth of the LOS is defined as the angle in the plane perpendicular to the line through the two (2) precision holes (B-B in Figure 1). Zero azimuth is the line perpendicular to the plane of the mounting pads of the AOT. The elevation of the LOS is defined as an angle in the plane containing the LOS and perpendicular to the azimuth plane. Zero elevation is the line contained in the azimuth plane.

All azimuth and elevation angles (6) shall be calibrated with respect to the AOT alignment reference features within 30 arc seconds of true angle value.

3-1.9 Reticle Cursor Readout Accuracy. The mechanical readout of the AOT counter shall indicate the true angular position of the reticle cursor with respect to the alignment reference features of the AOT (Figure 1) within 60 seconds of arc.

3-1.10 Reticle Power Match. The reticle pattern shall indicate the true radial displacement star angle as measured from the center of the reticle within 60 seconds of arc.

3-1.11 Pressure Leak Rate. With the upper section of the AOT in vacuum, a differential pressure of 5 psi or greater shall not cause a leakage rate in excess of 9.99×10^{-5} st'd cc/sec of helium.

3-1.12 Mechanical Integrity. The AOT shall be capable of withstanding the Mechanical Integrity Test specified in section 4 without degradation in Functional Performance as required in paragraph 3-1.14.

3-1.13 Thermal Vacuum. The AOT shall be capable of withstanding the Thermal Vacuum Test specified in section 4 without degradation in Functional Performance as required in paragraph 3-1.14.

3-1.14 Repeatability. In order to demonstrate that there has been no significant change in characteristics of the AOT between Baseline Performance Tests (par. 4-2.1) and Functional Performance Tests (par. 4-2.6), the data from the tests listed in Table 1 shall be compared. The maximum allowable difference between the two sets of data for corresponding tests shall be as specified in Table 1.

3-1.15 Eyepiece Heater

3-1.15.1 Resistance. At a room temperature of 77F ± 10°F, the resistance between pins P1-5 and P1-6 shall be 157 ± 10% ohms.

3-1.15.2 Insulation Resistance. The insulation resistance shall be a minimum of 100 megohms with 500 VDC applied.

3-1.15.3 Heater. The heater current drain shall be 215 ma. maximum with 28 VDC applied to pins P1-5 and P1-6.

3-1.15.4 Thermostat. The thermostat shall be open when the assembly has been exposed to an environment of 160° ± 5°F for 5 hours.

The thermostat shall be closed when the assembly has stabilized in a room environment of 77 ± 10°F.

Table I

Test	Performance Requirement	Max. allowable difference between Baseline and Functional Performance Tests
System Focus	±0.1 diopters	±0.1 diopters
Reticle Eccentricity	.0002 inch (20 arc seconds)	.0001 inch (10 arc seconds)
Star Line of Sight	Calibrated within 30 arc seconds	± 15 arc seconds
Reticle Cursor Readout Accuracy	± 60 arc seconds	± 36 arc seconds
Reticle Power Match	± 60 arc seconds	± 20 arc seconds

3-2 PRODUCT CONFIGURATION

3-2.1 Drawings. The configuration of the AOT assembly shall be in accordance with APOLLO G&N Drawing 6011000 and all drawings and engineering data reference thereon.

3-2.2 Nameplate and Serialization. Each AOT shall have a nameplate conforming to the requirements specified on the applicable drawing.

Each AOT identified by General Arrangement (or Assembly) drawing shall be identified by a serial number assigned in accordance with ND 1002023. This number shall be affixed to the nameplate on the AOT.

4 QUALITY ASSURANCE PROVISIONS

4-1 GENERAL. The contractor responsible for the manufacture of the AOT assembly shall be responsible for performing each test required herein.

4-1.1 The failure of the end product to pass any examination or test of this section will automatically classify the unit as nonconforming. When nonconforming units are corrected by th contractor, the unit shall be reinspected. When corrective action has been taken, the reinspection of a nonconforming unit may be limited to the test or examination which defined the nonconformance or, when so directed by the cognizant inspector, a complete reexamination and retest of the unit may be required. Nonconforming units which have not been corrected will be considered for acceptance only upon formal application by the contractor to the cognizant NASA representative.

Step one will be performed under room conditions after the AOT has been mounted in the chamber. A dioptometer will be arranged outside the chamber to determine focus of the reticle as viewed through the [illegible] The reticle focus will be [illegible] throughout

Step one consists of mounting the AOT in chamber under room ambient conditions. e the reticle through the eyepiece.

The second step consists of lowering the pressure in both sides of the dual chamber, while raising temperature of both sides to 160°F as quickly as possible. The space-side pressure will be reduced to 10^{-5} TORR or lower; the cabin-side pressure will be reduced to 10^{-1} TORR or lower. Exposure time, including the time required to reach these conditions will be 6 hours. The reticle focus will be checked once during the last hour, by viewing through the dioptometer.

Step three consists of raising the pressure in the cabin side to 5 psia, while maintaining space pressure at 10^{-5} TORR or lower. The temperature in both sides will be returned to room temperature. Total exposure time will be 1 hour, including the time required to reach these conditions. Reticle focus will then be checked by viewing through the dioptometer.

Step four consists of returning to room conditions, and checking reticle focus.

4-2.4 Drawing Compliance. The assembly shall be visually examined for compliance to the requirements of APOLLO G and N Drawing 6011000. Particular attention shall be given to inspection for nicks, scratches, burrs, dents, encapsulant defects, contaminants, pin misalignment, and legibility and appearance of markings.

4-2.5 Pressure Leak Rate. The cabin side of the AOT shall be evacuated and backfilled with a 10% minimum Helium mixture of 5 psia minimum. The space side of the AOT shall be evacuated and connected directly to a Helium Leak Detector. The Leak Detector used shall be calibrated prior to testing.

With the conditions specified above and the Leak Detector reading taken not less than 60 seconds after the 10% minimum Helium mixture has reached 5 psia minimum, the leak rate shall not exceed 9.99×10^{-5} st'd cc/sec using the following formula:

$$\text{Unit Leak Rate St'd cc/sec-He} = \frac{\left(\text{Leak Detector Reading}\right)\left(\text{Calibration St'd Leak Rate in } \frac{\text{cc of He}}{\text{sec}}\right)}{\left(\text{Calibrated Leak Detector reading}\right)\left(\frac{\text{\% He in Mixture}}{100}\right)}$$

With the AOT mounted on the test fixture as shown in Figure 2, and using a dioptometer and not less than 0.15 inch diameter aperture stop, the azimuth and elevation of either the AOT or the Star shall be adjusted until the center of the AOT reticle is superimposed on the 45° star. The reticle shall then be rotated until the cursor is centered on the 17° star. The counter shall read the true angle value of 180.00° ± 60 arc seconds.

With the 45° star positioned +14°50'00" and -14°50'00" with respect to the center of the reticle along the +X and -X reticle coordinates (reference drawing 6011428) and the reticle positioned so that the cursor is centered on the 45° star, the AOT counter shall read 82.52±0.017° and 277.48±0.017° respectively. The 14°50'00" LOS angle is equivalent to 21°02'18" rotary table angle.

4-2.6.10 Reticle Power Match. The AOT shall be mounted on a test fixture capable of positioning and measuring the azimuth and elevation of the AOT with respect to a simulated star. A collimator having a cross-hair reticle with an approximately 30 second simulated star at the center shall be provided. The star image shall be fixed at 45° elevation and 0° azimuth with respect to the alignment features of the AOT (shown in Figure 1) within 6 arc seconds. With the AOT mounted on the test fixture as shown in Figure 2 and the reticle at 0°, the azimuth and elevation of either the AOT or the Star shall be adjusted using a dioptometer and not less than 0.15 inch diameter aperture stop until the center of the reticle is superimposed on the star image. The azimuth reading shall be with the reticle at 0° position.

The azimuth and elevation of the simulated star and the rotation of the reticle shall then be adjusted until the spiral is centered on the star along the -X RETICLE coordinate. The azimuth reading shall indicate a 7.5° ± 60 arc second radial difference from the azimuth reading taken with the reticle at 0° position, after due account of coordinate transformations has been made.

The preceding paragraph shall be repeated with the spiral centered on the star along the X RETICLE coordinate. The azimuth reading shall indicate a 22.5° ± 60 arc second radial difference from the azimuth reading taken with the reticle at 0° position.

With the reticle rotated to the 90° position, the azimuth and elevation of the AOT shall be adjusted until the center of the reticle is superimposed on the simulated star. The azimuth reading shall be with the reticle at 90° position.

The azimuth and elevation of the simulated star and the rotation of the reticle shall be adjusted until the spiral is centered on the star along the -Y RETICLE coordinate. The azimuth reading shall indicate a 15.0° ± 60 arc second radial difference from the azimuth reading taken with the reticle at 90° position.

4-2.6.11 Eyepiece Heater Test.

4-2.6.11.1 Resistance: Using a wheatstone bridge measure that the resistance between pins P1-5 and P1-6 is as specified in Par. 3-1.15.1 to be in accordance with MIL-STD-202 Method 303.

4-2.6.11.2 Insulation Resistance. Using a megohmeter verify that the insulation resistance between pins P1-5, P1-6 and assembly case (Gnd) is as specified in Par. 3-1.15.2 when tested per MIL-STD-202, Method 302 (shunted to a short circuit current of 6 μ amps) Condition B with 500VDC applied.

4-2.6.11.3 Current Drain: Using an ammeter the current drain shall be as specified in Par. 3-1.15.3.

4-2.6.11.4 Thermostat: With the AOT assembly mounted in a thermo-vacuum chamber at 160° ± 5°F, the thermostat shall be open after a period of 5 hours, as indicated by heater circuit resistance.

With the AOT assembly stabilized at room temperature 77 ± 10°F the thermostat shall be closed as indicated by heater circuit resistance.

4-2.6.12 Repeatability. Repeatability shall be as specified in paragraph 3-1.14.

4-3. CALIBRATION OF LEM ALIGNMENT OPTICAL TELESCOPE FOR FIELD APPLICATIONS.

After all aforementioned requirements on the AOT have been met, the supplier shall provide, in the data package for each unit, a calibration descriptive of the performance of the AOT in ambient room pressure as specified in Section on 4-3.1. The data taken shall constitute a baseline for field sites and the tolerances of paragraph 3 are not applicable to the uncorrected ambient room pressure data.

4-3.1 The following functional performance tests of the AOT shall be run utilizing a 0.10 inch diameter aperture stop and a 6X dioptometer.

4-3.1.1 System Focus. The 45° target star is positioned 15° in the field (21° turntable reading). With the dioptometer set to 0 diopters the AOT eyepiece shall be adjusted to bring the reticle at 15° into optimum focus. Rotating the dioptometer barrel, the 45° target star shall be brought into optimum focus. The difference between the two readings shall be recorded.

4-3.1.2 Star Line of Sight. The AOT shall be mounted on a test fixture capable of positioning and measuring the azimuth and elevation of the AOT with respect to a simulated star. A collimator having a cross-hair reticle with an approximately 30 second simulated star at the center shall be provided. The star image shall be fixed at 45° elevation and 0° azimuth with respect to the alignment features of the AOT (shown in Figure 1) within 6 arc seconds. With the AOT mounted on the test fixture and the dioptometer set at zero, the AOT eyepiece shall be adjusted to give optimal focus on the AOT reticle.

The AOT shall be set to the 0° (F) detent position as shown in Figure 2. The azimuth and elevation of either the AOT or the star shall be adjusted until the center of the AOT reticle is superimposed on the simulated star. True Angle values for azimuth and elevation shall then be recorded and compared to the vacuum data to establish a correction factor.

4-3.1.3 Reticle Cursor Readout Accuracy. The AOT shall be mounted on a test fixture capable of positioning and measuring the azimuth and elevation of the AOT with respect to simulated stars. Two collimators having crosshair reticles with approximately 30 second simulated stars at the center shall be provided. One star image shall be fixed at 45° elevation and the other shall be fixed at 17° elevation with respect to the alignment features of the AOT (shown in Figure 1) within 6 arc seconds. Both star images shall be fixed at 0° azimuth with respect to those same alignment features within 6 arc seconds.

With the AOT mounted on the test fixture as shown in Figure 2, and the dioptometer set at zero, the AOT eyepiece shall be adjusted to give optimal focus on the AOT reticle. The azimuth and elevation of either the AOT or the star shall be adjusted until the center of the AOT reticle is superimposed on the 45° star. The reticle shall then be rotated until the cursor is centered on the 17° star. The AOT counter angle shall be recorded.

APOLLO/LEM G&N Specification
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PROCUREMENT SPECIFICATION
PRODUCT CONFIGURATION AND ACCEPTANCE REQUIREMENTS
LEM ALIGNMENT OPTICAL TELESCOPE
DRAWING NO. 6011000

Record of Revisions

(A)

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
7-1-68	A	36462	2	MM	N R

This specification consists of page 1 to 16 inclusive.

APPROVALS	NASA/MSC	22 Mar 68 MIT/IL	KIC

1 SCOPE

1-1 PURPOSE. This specification establishes the detail requirements for complete identification and acceptance of the LEM Alignment Optical Telescope, Part No. 6011000-073, 6011000-091, 6011000-111 and 6011000-074.

1-2 PRODUCT CONFIGURATION AND BASELINE ACCEPTANCES

1-2.1 The product configuration baseline shall be established by FACI of the LEM Alignment Optical Telescope, Serial No. . This unit and all subsequent units regardless of intended use shall be accepted to the configuration defined by Serial No. unless formally approved otherwise as required by ANA Bulletin No. 445.

2 APPLICABLE DOCUMENTS

2-1 EFFECTIVE ISSUES. The following documents form a part of this specification to the extent specified herein.

2-1.1 Unless otherwise specified herein, Military and Government Standards and Specifications shall be the issue in effect on the date of request for proposal or invitation to bid

SPECIFICATIONS

APOLLO G AND N

ND 1002214	General Specification for Preservation Packaging, Packing and Container Marking of Apollo Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment.
ND 1002023	Serialization, General Specification for

STANDARDS

Military

FED-STD-209	Clean Room and Work Station Requirements, Controlled Environment
MIL-STD-150A	Photographic Lenses
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts

APOLLO G&N Specification
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PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE TEST REQUIREMENTS

PSA ADAPTER MODULE (LEM)

DRAWING NO. 6900088

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				AC	NASA
9/21/67	A	34665	3, 12, 14, 19	MGM EA	---

This specification consists of page 1 to 23 inclusive.

APPROVALS	NASA/MSC	E.N. J. M. Walton 8-8-67	MIT/IL		D. Carpenter AC

3. REQUIREMENTS

3.1 PERFORMANCE

3.1.1 Output Voltages. The assembly shall provide two outputs at 5 vdc ±10 percent and one output at 10 vdc ±10 percent.

3.1.2 Output Signals. The output signals shall be 5 vac ±10 percent, with a gain of 0.18 V/V ±10 percent for one input channel and 1 V/V ±10 percent for three input channels.

3.1.3 AC Amplifiers

3.1.3.1 Clipping:

a. Input level at which clipping is no longer visible shall be greater than 5.5V rms at 3200 cps ±1 percent and 800 cps ±1 percent with a supply voltage of 28 vdc ±1 percent.

b. Input level at which clipping is no longer visible shall be greater than 31V rms at 800 cps ±1 percent with a supply voltage of 28 vdc ±1 percent.

3.1.3.2 Gain:

a. With an input of 0.15V to 5V rms ±1 percent, 800 cps ±1 percent or 3200 cps ±1 percent and a source impedance of 10K to 20K, the gain (E_{out}/E_{in}) shall be 0.99 ±0.01 volt/volt for 13 channels.

b. With an input of 28V rms ±1 percent, 800 cps ±1 percent, the gain shall be .178 volt/volt ±1 percent for two channels.

3.1.3.3 Harmonic Distortion: The total harmonic distortion shall be less than 1 percent at 800 cps ±1 percent and 3200 cps ±1 percent with an input of 5V rms.

3.1.3.4 Phase Shift: The phase shift between the signal source and the output shall be 0° ±4° at 800 cps ±1 percent.

3.1.4 Phase Difference Circuit

3.1.4.1 Reference Point. The circuit shall use the leading edge of the input pulse as a reference point.

3.1.4.2 Output Impedance. The output impedance shall be less than 50K ohms.

3.1.4.3 Output with Synchronized Input.

TABLE III

DETECTOR CONNECTIONS

CARD NUMBER	INPUT		R_S OHMS ±1%	INPUT VOLTAGE (Volts)	OUTPUT		BUFFERED OUTPUT J244-
	HI J1-	LO J1-			HI J244-	LO J244-	
A12	83	23	2K	5.0	6	7	4
A13	84	23	2K	5.0	10	11	8
A14	21	8	10K	5.0	14	15	12
A15	42	23	10K	5.0	26	27	24
A16	41	23	10K	10.0	30	31	28
A17	60	23	2K	5.0	34	35	32

b. Apply positive pulses with a pulse width of 2 μsec ±5 percent, a rise time of less than 100 nsec, a magnitude as specified in Table III ±5 percent, and a repetition rate of 2000±100 pps.

c. Adjust potentiometer R13 on the applicable assembly card until an output pulse greater than 20 μsec long with a magnitude greater than 5.5 volts is observed.

d. Apply negative input pulses with a pulse width of 2 μsec ±5 percent, a rise time of less than 100 nsec and the magnitude adjusted until it just triggers an output pulse greater than 20 μsec long with a magnitude greater than 5.5 volts.

e. The magnitude of both positive and negative pulses that just trigger an output shall be as specified in Table III, ±15 percent.

f. Readjust R13 to assure triggering at the proper level if necessary.

(1) Width: 1 μsec ±5 percent
(2) Rise Time: <100 nsec
(3) Repetition Rate: 2000 pps ±10 percent
(4) Magnitude: Variable from 1 volt to 12 volts

b. Positive and negative pulses having the following characteristics:

(1) Fall Time: >50 μsec
(2) Rise Time: 24 μsec ±5 percent
(3) Magnitude: 1.30, ±5 percent, times the magnitude of pulses specified in 4.2.1.3.a(4).

c. Positive and negative pulses having the following characteristics:

(1) Fall Time: >100 μsec
(2) Rise Time: 60 μsec ±5 percent
(3) Magnitude: 1.30, ±5 percent times the magnitude of pulses specified in 4.2.1.3.a(4).

d. Positive and negative pulses having the following characteristics:

(1) Width: 1 μsec ±5 percent
(2) Rise Time: <100 nsec
(3) Magnitude: 1.1 times the magnitude of the pulses specified in 4.2.1.3.a(4).

e. Positive and negative pulses having the following characteristics

(1) Width: 2 μsec ±5 percent
(2) Rise Time: <100 nsec
(3) Repetition Rate: 2000 pps ±10 percent
(4) Magnitude: Variable from 1 volt to 12 volts

4.2.2 Nonconforming Units. Failure of the unit to pass any examination or test of this specification shall automatically classify the unit as nonconforming. Each nonconforming unit corrected by the contractor shall be reinspected. Reinspection may be limited to the test or examination which defined the nonconformance, or when directed by the cognizant inspector, a complete retest and reexamination may be required. Nonconforming units which have not been corrected will be considered for acceptance only upon formal application by the contractor to the cognizant NASA representative.

4.3 TESTS

4.3.1 Drawing Compliance. The assembly shall be visually examined for compliance to the requirements of Drawing 6900088. Particular attention shall be given to inspection for nicks, scratches, burrs, dents, encapsulant defects, contaminants, pin misalignment, and legibility and appearance of markings.

APOLLO G&N Specification
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CODE IDENT NO. 99974

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE TEST REQUIREMENTS

PSA ADAPTER MODULE (LEM)

DRAWING NO. 6900088

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				AC	NASA

This specification consists of page 1 to 23 inclusive.

APPROVALS	NASA/MSC	E.N. J. M. Watson 5-8-67 MIT/IL	CC B/ D. Carpenter AC

3.1.6.2 Output Pulse Characteristics

a. Magnitude: >5.5 volts <15 volts
b. Pulse width: >20 µsec <50 µsec at 5.5 volt magnitude
c. Rise Time: <5 µsec 0.5 to 5.5 volts
d. Fall Time: <30 µsec 5.5 to 0.5 volts

3.1.7 Inhibit Voltage Fail. The assembly output shall be as specified in Table I under the conditions specified therein.

TABLE I

INHIBIT VOLTAGE FAIL TEST

CONDITIONS	OUTPUT PINS		SIGNAL
	From (Hi)	To (Lo)	
Jumper pins J243-35 to J243-20	J1-36	J243-18	28 vdc ±5%
Jumper pins J243-35 to J243-39	J1-18	J243-18	28 vdc ±5%
Jumper pins J243-35 to J243-8	J1-8	J243-18	28 vdc ±5%
Jumper pins J243-35 to J243-22	J1-8	J243-18	28 vdc ±5%
Inhibit Voltage Fail switch in "ON" position	J1-6	J243-18	28 vdc ±5%
Inhibit Voltage Fail switch in "OFF" position	J1-6	J243-18	<1 vdc

3.2 PRODUCT CONFIGURATION

3.2.1 Drawings. The configuration of the assembly shall be in accordance with APOLLO G&N Drawing 6900088 and all drawings and engineering data referenced thereon.

3.2.2 Standards of Manufacturing, Manufacturing Process and Production

3.2.2.1 Continuity and DC Resistance. The dc resistance between pins shall be as specified in Table II.

3.2.2.2 Insulation Resistance. The insulation resistance between pins J1-66 and J1-85 shall be greater than 1 megohm.

TABLE II

CONTINUITY AND RESISTANCE

FROM	TO	RESISTANCE (Ohms)
J1-79	J1-54	<2
J1-79	J1-16	<2
J1-79	J1-64	<2
J1-66	J1-67	<2
J1-66	J1-68	<2
J1-72 (+)	J243-42 (-)	>10 meg
J2-43-42(+)	J1-72 (-)	<100 *1
J1-73	J243-24	<2
J1-70 (+)	J243-43 (-)	>10 meg
J2-43-43(+)	J1-70 (-)	<100 *1
J1-71	J243-44	<2
J1-24	J244-1	<2
J1-25	J244-79	<2
J1-83	J244-4	10,000 ±2%
J1-84	J244-8	10,000 ±2%
J1-21	J244-12	10,000 ±2%
J1-42	J244-24	10,000 ±2%
J1-41	J244-28	10,000 ±2%
J1-60	J244-32	10,000 ±2%
J1-23	J244-2	<2
J1-59	J244-5	<2
J1-59	J244-9	<2
J1-23	J244-25	<2
J1-23	J244-29	<2
J1-23	J244-33	<2
J1-23	J244-19	<2
J1-8	J244-13	<2
J1-8	J244-49	<2
J1-8	J244-51	<2
J1-8	J244-53	<2
J1-8	J244-55	<2
J1-8	J244-57	<2
J1-8	J244-59	<2
J1-8	J244-63	<2
J1-8	J244-65	<2
J1-8	J244-67	<2
J1-8	J244-69	<2
J1-43	J244-18	<2
J1-55	J244-37	<2
J1-55	J244-41	<2
J1-55	J244-45	<2

*1 Diode forward resistance at a current of 10 ma minimum, 100 ma maximum

4.3.8.2.4 Pulse Repetition Rate

a. Positive pulses. With positive pulses with a width of 1 μsec ±5 percent, a rise time of less than 100 nsec and a magnitude of 1.1, ±5 percent, times the magnitude recorded in 4.3.8.2.1.a applied, output pulses with a repetition rate ≥10 pps shall be present.

b. Negative pulses. With negative pulses applied with a width of 1 μsec, ±5 percent, a rise time of less than 100 nsec and a magnitude of 1.1, ±5 percent, times the magnitude recorded in 4.3.8.2.1.b applied, output pulses with a reptitition rate ≥10 pps shall be present.

4.3.9 Line Drive Amplifier. The Power Switch shall be in the "ON" position during this test.

4.3.9.1 Clipping. With the Accel Mon switch in the "Z Pipa" position and the Line Drive Amplifier connected as recommended in Figure 5, the oscillator frequency set at 3200 cps ±1 percent, the oscillator output amplitude shall be increased until clipping occurs and then decreased until clipping is no longer visible. E_{in} shall be greater than 5.5V rms.

4.3.9.2 Gain. With the Accel Mon switch in the "Z Pipa" position, the Amplifier connected as recommended in Figure 5 and E_{in} set at 0.5 and at 5.0V rms ±1 percent at 3200 cps ±1 percent, the gain (E_{out}/E_{in}) shall be 1 volt/volt ±5 percent for both levels.

4.3.9.3 Harmonic Distortion. With the Accel Mon switch in the "Z Pipa" position, the Amplifier connected as recommended in Figure 5, an input signal of 5V rms ±1 percent at 3200 cps ±1 percent applied, the total harmonic distortion of the output waveform shall be less than 2 percent.

4.3.9.4 Phase Shift. With the Accel Mon switch in the "Z Pipa" position, the Amplifier connected as recommended in Figure 5 and E_{in} adjusted to 5V rms ±1 percent at 3200 cps ±1 percent, the phase shift between E_{in} and E_{out} shall be 0° ±4°.

4.3.10 Inhibit Voltage Fail Test. With +28 vdc ±5% between pins J243-35 (hi), J1-66 (Hi), and J243-18 (Lo) and under the conditions specified in Table I, the assembly shall provide the signals between the corresponding pins specified in Table I. With the Inhibit Voltage Fail switch in the "ON" position and +28 vdc removed from J1-66 (Hi) the output voltage between J1-6 (Hi) and J243-18 (Lo) shall be less than 1 vdc.

5. PREPARATION FOR DELIVERY

5.1 GENERAL. Preparation for delivery shall be in accordance with Specification ND1002214.

6. NOTES. None.

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22255

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 23624	RAJ		11-2-65	WK

-021 603	-011 602	-011 601	EFFECTIVITY UNDEFINED G & N EFFECTIVITY	TITLE	REMARKS	FIND NO.
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						44
						43
						42
						41
						40
						39
						38
						37
						36
						35
						34
						33
						32
						31
6015000	6015000	6015000		PS MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM		30
						29
						28
						27
						26
						25
						24
6015497	6015497	6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
						22
						21
						20
						19
						18
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						13
						12
						11
						10
						9
						8
						7
						6
						5
						4
6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1

NOTES:

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LIST OF MATERIALS

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RESISTOR VALUES ARE IN OHMS
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APPROVED MIT [illegible]
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														6015572	6015572	6015572		LEM + 28 VDC 800~ POWER DISTRIBUTION		45
														6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
														6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
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														6015000	6015 00	6015000		PS MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM		30
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														6015497	6015497	6015497		ATP APOLLO LEM INERTIAL SUBSYSTEM		23
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														6015562	6015562	6015562		LEM 5 AXIS MODING		3
														6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
														6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1
														-021	-011	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
														603	602	601	G & N EFFECTIVITY			

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CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
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REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 23624	RAJ		11-2-65	WK
B		REVISED PER TDRR 24676	RAJ		12-13-65	WK
C		REVISED PER TDRR 26021	RAJ		2-8-66	WK

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														ATP 6015497	ATP 6015497	ATP 6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
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														6015562	6015562	6015562		LEM 5 AXIS MODING		3
														6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
														6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1

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C		REVISED PER TDRR 26021	RAJ		2-8-66	WK
D		" " " 29163			5-24-66	mdM

-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
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6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
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P 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION PART I PGNCS FOR LEM.		30
P 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION-PART II PGNCS FOR LEM		29
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ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
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ND 1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
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			2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
			2001452	2001452		APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1

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B		REVISED PER TDRR 24676	RAJ		12-3-65	WK
C		REVISED PER TDRR 26021	RAJ		2-8-66	WK
D		" " " 29163	"		5-24-66	
E		REVISED PER TDRR 31728	LAL		1-3-66	

[illegible]

												-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
												605	604	603	602	601	G & N EFFECTIVITY			
												6015572	6015572	6015572	6015572	6015572		LEM + 28 VDC 800~ POWER DISTRIBUTION		45
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												ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
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												ND 1021042	ND 1021042	ND 1021042	ND 1021042	ND 1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
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															2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
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												6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
												6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1

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C		REVISED PER TDRR 26021	RAJ		8-8-66	WK
D		" " " 29163	"		5-24-66	
E		REVISED PER TDRR 31728	LAL	—	11-3-66	
F		REVISED PER TDRR 31999			29 NOV 66	

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6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
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ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323		POST-INSTALLATION C/O SPEC FOR LEM G&N SYSTEM		33
ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322		G&N PROGRAMMING REQ'TS (D&C) FOR ACE (LM)		32
ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319		ACE-S/C COMPUTER SUBPROGRAM SPEC APOLLO CM & LM TESTING		31
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS6015000	PS6015000		MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM.		30
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION-PART II PGNCS FOR LEM		29
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ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021046	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
																				19
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1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042		PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		10
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															2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
															2001452	2001452		APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1
-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	G&N EFFECTIVITY			

NOTES:

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QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.A. Jones 9-2-65
CHECKED 9-7-65
APPROVED W. 7 Sept 65
APPROVED
APPROVED MIT M.G. 8 Sept 65
APPROVED MSC PP7-55
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N
SUPPORTING DOCUMENT LIST
LEM

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 6019999
SCALE —
SHEET 1 OF 1

6019999 F

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22255

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 23624	RAJ		11-2-65	WK
B		REVISED PER TDRR 24676	RAJ		12-13-65	WK
C		REVISED PER TDRR 26021	RAJ		2-8-66	WK
D		" " " 29163	"		5-24-66	
E		REVISED PER TDRR 31728	LAL	—	11-3-66	
F		REVISED PER TDRR 31999			29 NOV 66	
G		REVISED PER TDRR 32173		JAC		

6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572		LEM +28VDC 800~POWER DISTRIBUTION		45
6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570		LEM +28VDC POWER DISTRIBUTION		43
																				42
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																				39
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																				37
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ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323		POST-INSTALLATION C/O SPEC FOR LEM G&N SYSTEM		33
ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322		G&N PROGRAMMING REQ'TS (D&C) FOR ACE (LM)		32
ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319		ACE-S/C COMPUTER SUBPROGRAM SPEC APOLLO CM & LM TESTING		31
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS6015000	PS6015000	PS6015000		MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM.		30
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION PART II PGNCS FOR LEM		29
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																				26
																				25
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ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021046	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038		PACKING, SHIPPING & HANDLING MANUAL		19
1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039		AUXILIARY GROUND SUPPORT EQUIPMENT MANUAL		18
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1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042		PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		10
																				9
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															2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
															2001452	2001452		APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1
-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	G & N EFFECTIVITY			

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LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

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DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN RA Jones 9-2-65
CHECKED 9-7-65
APPROVED 7 Sept 65
APPROVED
APPROVED MIT 8 Sept 65
NOT REQUIRED PER LETTER PP7-65-
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N
SUPPORTING DOCUMENT LIST
LEM

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 6019999
SCALE —
SHEET 1 OF 1

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22255

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 23624	RAJ		11-2-65	WK
B		REVISED PER TDRR 24676	RAJ		12-13-65	WK
C		REVISED PER TDRR 26021	RAJ		8-8-66	WK
D		" " " 29163	"		5-24-66	
E		REVISED PER TDRR 31728	LAL	—	11-9-66	
F		REVISED PER TDRR 31999			29 NOV 66	
G		REVISED PER TDRR 32173		JAC	10 DEC 66	

6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572		LEM + 28 VDC 800~ POWER DISTRIBUTION		45
6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
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ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323		POST-INSTALLATION C/O SPEC FOR LEM G&N SYSTEM		33
ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322		G&N PROGRAMMING REQ'TS (D&C) FOR ACE (LM)		32
ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319		ACE-S/C COMPUTER SUBPROGRAM SPEC APPOLLO CM & LM TESTING		31
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000		MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM.		30
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000		MASTER END ITEM DETAIL SPECIFICATION-PART II PGNCS FOR LEM		29
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ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP6015497	ATP6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021046	ND 1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021036	1021038	1021038	1021038	1021038		PACKING SHIPPING & HANDLING MANUAL		19
1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039		AUXILIARY GROUND SUPPORT EQUIPMENT MANUAL		18
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1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042		PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		10
																				9
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																				7
																				6
															2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
															2001452	2001452		APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1
-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	G&N EFFECTIVITY			

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NEXT ASSY	USED ON
ND1000000	

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UNLESS OTHERWISE SPECIFIED
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TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.A. Jones 9-2-65
CHECKED 9-7-65
APPROVED 7 Sept 65
APPROVED
APPROVED MIT 8 Sept 65
APPROVED MSC
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N
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CODE IDENT NO. 80230
SIZE E
DRAWING NO. 6019999
SCALE —
SHEET 1 OF 1

6019999 G

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22255

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
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B		REVISED PER TDRR 24676	RAJ		12-13-65	WK
C		REVISED PER TDRR 26021	RAJ		[illegible]	WK
D		" " " 29163	"		5-24-66	[illegible]
E		REVISED PER TDRR 31728	LAL		11-3-66	[illegible]
F		REVISED PER TDRR 31999	[illegible]		29 NOV 66	[illegible]
G		REVISED PER TDRR 32173	[illegible]	JRC	10 DEC 66	
H		REVISED PER TDRR 32290	[illegible]	[illegible]	3 DEC 66	

6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572		LEM + 28 VDC 800~ POWER-DISTRIBUTION		45
6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
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ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323		POST-INSTALLATION C/O SPEC FOR LEM G&N SYSTEM		33
ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322		G&N PROGRAMMING REQ'TS (D&C) FOR ACE (LM)		32
ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319		ACE-S/C COMPUTER SUBPROGRAM SPEC APOLLO CM & LM TESTING		31
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000		MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM.		30
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION-PART II PGNCS FOR LEM		29
																				28
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																				26
																				25
																				24
ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP6015497	ATP6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021046	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038	1021038		PACKING, SHIPPING & HANDLING MANUAL		19
1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039	1021039		AUXILIARY GROUND SUPPORT EQUIPMENT MANUAL		18
1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040	1021040		BENCH MAINTENANCE GSE CMRM		17
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																				11
1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042		PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		10
																				9
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																				7
																				6
																2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
																2001452	2001452		APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1
-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	G & N EFFECTIVITY			

NOTES:

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LIST OF MATERIALS

ND1000000	
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CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
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DRAWN R.A. Jones 9-2-65
CHECKED [illegible] 9-7-65
APPROVED W. [illegible] 7 Sept 65
APPROVED
APPROVED MIT [illegible] 8 Sept 65
NOT REQUIRED PER LETTER NASA PP7-65-612
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

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LEM

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 6019999
SCALE —
SHEET 1 OF 1

6019999

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22255

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 23624	RAJ		11-2-65	WK
B		REVISED PER TDRR 24676	RAJ		12-13-65	WK
C		REVISED PER TDRR 26021	RAJ		8-8-66	WK
D		" " " 29163	"		5-24-66	
E		REVISED PER TDRR 31728	LAL		11-3-66	
F		REVISED PER TDRR 31999	ME		29 NOV 66	
G		REVISED PER TDRR 32173			10 DEC 66	
H		REVISED PER TDRR 32290			3 DEC 66	
J		REVISED PER TDRR 32357.			6 JAN 67	

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6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
																				42
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																				38
																				37
																				36
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ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323		POST-INSTALLATION C/O SPEC FOR LEM G&N SYSTEM		33
ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322		G&N PROGRAMMING REQ'TS (D&C) FOR ACE (LM)		32
ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319		ACE-S/C COMPUTER SUBPROGRAM SPEC APPOLLO CM & LM TESTING		31
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM.		30
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION - PART II PGNCS FOR LEM		29
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ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP 6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021046	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038		PACKING, SHIPPING & HANDLING MANUAL		19
ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039		AUXILIARY GROUND SUPPORT EQUIPMENT MANUAL		18
ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040		BENCH MAINTENANCE GSE CMRM		17
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1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042		PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		10
																				9
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																				6
														2001463	2001463			IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
														2001452	2001452			APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1
-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	G & N EFFECTIVITY			

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LIST OF MATERIALS

ND1000000	
NEXT ASSY	USED ON
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DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
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DRAWN R.A. Jones 9-2-65
CHECKED 9-7-65
APPROVED W. 7 Sept 65
APPROVED

APPROVED MIT 8 Sept 65
APPROVED NASA MSC NOT REQUIRED PER LETTER PP7 65-612
DATE

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G & N
SUPPORTING DOCUMENT LIST
LEM

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 6019999
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SHEET 1 OF 1

22255

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 23624	RAJ		11-2-65	
B		REVISED PER TDRR 24676	RAJ		12-3-65	
C		REVISED PER TDRR 26021	RAJ		[illegible]	
D		" " " 29163	"		5-[illegible]-66	
E		REVISED PER TDRR 31728	LAL		11-3-66	
F		REVISED PER TDRR 31999	[illegible]		[illegible]	
G		REVISED PER TDRR 32175	[illegible]	JOC	[illegible]	
H		REVISED PER TDRR [illegible]	[illegible]	[illegible]	[illegible]	
J		REVISED PER TDRR 32357.	[illegible]		[illegible]	
K		REVISED PER TDRR 33160	[illegible]	[illegible]	[illegible]	

617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	G&N EFFECTIVITY	TITLE	REMARKS	FIND NO.
-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED			
6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572		LEM + 28 VDC 800~ POWER DISTRIBUTION		45
6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
																				42
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																	ND1002946	DESCRIPTION & REQUIREMENTS FOR COMPLETING ACC FORM I (REVISED)		35
																				34
ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323		POST-INSTALLATION C/O SPEC FOR LEM G&N SYSTEM		33
ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322		G&N PROGRAMMING REQ'TS (D&C) FOR ACE (LM)		32
ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319		ACE-S/C COMPUTER SUBPROGRAM SPEC APOLLO CM & LM TESTING		31
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION-PART I PGNCS FOR LEM		30
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6C15000		MASTER END ITEM DETAIL SPECIFICATION-PART II PGNCS FOR LEM		29
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ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP6015497	ATP6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021046	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038		PACKING, SHIPPING & HANDLING MANUAL		19
ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039		AUXILIARY GROUND SUPPORT EQUIPMENT MANUAL		18
ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040		BENCH MAINTENANCE GSE CMRM		17
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1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042		PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		10
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															2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
															2001452	2001452		APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1

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ND1000900	

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CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
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MATERIAL —

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DRAWN 9-8-65
CHECKED 9-7-65
APPROVED 7 Sept 65
APPROVED
APPROVED MIT
NOT REQUIRED PER LETTER
APPROVED NASA PP7-65-412
MSC
DATE

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C		REVISED PER TDRR 26021	KAJ		3-8-66	WK
D		" " " 29163	"		5-24-66	
E		REVISED PER TDRR 31728	LAL		11-3-66	
F		REVISED PER TDRR 31999			21 NOV 66	
G		REVISED PER TDRR 32173		JAC	10 DEC 66	
H		REVISED PER TDRR 32290			1 DEC 66	
J		REVISED PER TDRR 32357.			6 JAN 67	
K		REVISED PER TDRR 33160	R B		9 MAR 67	
L		REVISED PER TDRR 33487			4 APR 67	

-171	-161	-151	-141	-131	-121	-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED	TITLE	REMARKS	FIND NO.
617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	G & N EFFECTIVITY			
6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572	6015572		LEM + 28 VDC 800~ POWER DISTRIBUTION		45
6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571	6015571		LEM 0 VDC DISTRIBUTION		44
6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570	6015570		LEM + 28 VDC POWER DISTRIBUTION		43
																				42
																				41
																				40
																				39
																				38
																				37
																				36
																	ND1002345	DESCRIPTION & REQUIREMENTS FOR COMPLETING ACC FORM I (REVISED)		35
ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349	ND1002349				POST INSTALLATION C/O SPEC. FOR LEM G&N SYSTEM (KSC)		34
ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323	ND1002323		POST-INSTALLATION C/O SPEC FOR LEM G&N SYSTEM		33
ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322	ND1002322		G&N PROGRAMMING REQ'TS (D&C) FOR ACE (LM)		32
ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319	ND1002319		ACE-S/C COMPUTER SUBPROGRAM SPEC APPOLLO CM & LM TESTING		31
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000		MASTER END ITEM DETAIL SPECIFICATION - PART I PGNCS FOR LEM.		30
PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000	PS 6015000		MASTER END ITEM DETAIL SPECIFICATION-PART II PGNCS FOR LEM		29
																				28
																				27
																				26
																				25
																				24
ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP6015497	ATP 6015497	ATP 6015497	ATP 6015497	ATP6015497	ATP6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042	ND1021046	ND1021042	ND1021042	ND1021042	ND1021042	ND1021042		LEM PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		20
ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038	ND1021038		PACKING, SHIPPING & HANDLING MANUAL		19
ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039	ND1021039		AUXILIARY GROUND SUPPORT EQUIPMENT MANUAL		18
ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040	ND1021040		BENCH MAINTENANCE GSE CMRM		17
																				16
																				15
																				14
																				13
																				12
																				11
1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042	1021042		PRIMARY GUIDANCE, NAVIGATION AND CONTROL SYSTEM MANUAL		10
																				9
																				8
																				7
																				6
															2001463	2001463		IMU TEMPERATURE CONTROL SYSTEM SCHEMATIC DIAGRAM - BLOCK II		5
															2001452	2001452		APOLLO IMU TEMPERATURE CONTROL SYSTEM - BLOCK II TWO WIRE MECH		4
6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562	6015562		LEM 5 AXIS MODING		3
6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1

NOTES:

1. THIS DRAWING FOR REFERENCE ONLY.
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND1000000	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R.A. Jones 9-2-65
CHECKED 9-7-65
APPROVED 7 Sept 65
APPROVED

APPROVED MIT 8 Sept 65
NOT REQUIRED PER LETTER NASA PP7-65-412
APPROVED MSC
DATE

G & N
SUPPORTING DOCUMENT LIST
LEM

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 6019999
SCALE —
SHEET 1 OF 1

22255

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REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

														-031 603	-021 602	-011 601	EFFECTIVITY UNDEFINED G & N EFFECTIVITY	TITLE	REMARKS	FIND NO.
																				45
																				44
																				43
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																				26
																				25
																				24
														6015497	6015497	6015497		ATP APOLLO LEM INERTIAL SUB SYSTEM		23
																				22
																				21
																				20
																				19
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																				12
																				11
																				10
																				9
																				8
																				7
																				6
																				5
																				4
														6015562	6015562	6015562		LEM 5 AXIS MODING		3
														6015564	6015564	6015564		TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS (LEM)		2
														6015563	6015563	6015563		TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS (LEM)		1

NOTES:

1. THIS DRAWING FOR REFERENCE ONLY.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND 1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R G Jones 9-2-65
CHECKED A. J. [illegible] 9-7-65
APPROVED W. [illegible] 7 Sept 65
APPROVED
APPROVED MIT M G Hurley 8 Sept 65
APPROVED MSC NOT REQUIRED PER LETTER NASA PP7-65-612
DATE

G & N SUPPORTING DOCUMENT LIST LEM

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 6019999
SCALE
SHEET 1 OF 1

6899950 A

REVISIONS 15435					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER DO 58783			EC

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SERIALIZE PER ND 1002023. APPLY ITEM ② CENTERED OVER PRE-EXISTING INSEPARABLE ASSEMBLY IDENTIFICATION MARK (6899951-011) SO THAT INFORMATION READS FROM LEFT TO RIGHT, AWAY FROM THE RING.
3. ITEMS ③ THRU ⑩ WILL BE SHIPPED SEPARATED FROM THE ASSEMBLY. PACKAGE PER MIL-P-116 IA-8.
4. THIS ASSEMBLY MUST MEET THE REQUIREMENTS OF PS AND FTM ONLY WHEN SOLD AS A SPARE.
5. APPROXIMATE ASSEMBLY WEIGHT = 3 LBS, 1 OUNCE.
6. REFERENCE DRAWINGS:
   FAMILY TREE 6899958

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 15435 DATE 1/13/65

	QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				011				
SEE NOTE 3				2		8	6899957-002	WASHER, FLAT
				2		7	6899957-001	WASHER, FLAT
				2		6	6899956	STUD, SHOULDERED
				2		5	6899955	STUD, SHOULDERED AND STEPPED
				2		4	NAS 674V18	BOLT, HEX HD
				2		3	2899992	BOLT, IMU MOUNT
SEE NOTE 2				1		2	1014650-9	PLATE, IDENTIFICATION
				1		1	6899951-011	NAVIGATION BASE ASSY, LEM (FINAL MACH.)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950	6899950	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tomsen DATE 11 NOV 64
CHECKED C. Pinda 10 DEC 64
APPROVAL J. Hom 10 DEC 64
APPROVAL 11 DEC 64
NASA APPROVAL 1-13-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY - LEM

CODE IDENT NO. SIZE D 6899950
SCALE —
SHEET 1 OF 1

B 6899950

REVISIONS 15435					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER DO 58783			RC
B	—	REVISED PER MXC200371	—	24 MAR 65	KWK
C		REVISED PER TDRR 17940 CLASS A RELEASE (UPGRADED)			

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SERIALIZE PER ND 1002023. APPLY ITEM ② CENTERED OVER PRE-EXISTING INSEPARABLE ASSEMBLY IDENTIFICATION MARK (6899951-011) SO THAT INFORMATION READS FROM LEFT TO RIGHT, AWAY FROM THE RING.
3. ITEMS ③ THRU ⑩ WILL BE SHIPPED SEPARATED FROM THE ASSEMBLY. PACKAGE PER MIL-P-116 IA-8.
4.
5. APPROXIMATE ASSEMBLY WEIGHT = 3 LBS, 1 OUNCE.
6. REFERENCE DRAWINGS:
   FAMILY TREE 6899958

15435 1/13/65

SEE NOTE 3 (items 3 thru 8)

SEE NOTE 2 (item 2)

			2		8	6899957-002	WASHER, FLAT
			2		7	6899957-001	WASHER, FLAT
			2		6	6899956	STUD, SHOULDERED
			2		5	6899955	STUD, SHOULDERED AND STEPPED
			2		4	NAS 674V18	BOLT, HEX HD
			2		3	2899992	BOLT, IMU MOUNT
			1		2	1014650-19	PLATE, IDENTIFICATION
			1		1	6899951-011	NAVIGATION BASE ASSY, LEM (FINAL MACH.)
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950	6899950	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 11 NOV 64
CHECKED 10 DEC 64
APPROVAL 10 DEC 64
APPROVAL 11 DEC 64
NASA APPROVAL 1-13-65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE
ASSEMBLY-
LEM

CODE IDENT NO.
SIZE D
6899950
SCALE —
SHEET 1 OF 1

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		REVISED PER DO 58783			
B	—	REVISED PER MXC200371	—	24 MAR 65	
C		REVISED PER TDRR 17940 CLASS A RELEASE (UPGRADED)	—		
D		REVISED PER TDRR 19939.	—	22 JUN 65	JJJ JAC

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SERIALIZE PER ND 1002023. APPLY ITEM ② CENTERED OVER PRE-EXISTING INSEPARABLE ASSEMBLY IDENTIFICATION MARK (6899951-011) SO THAT INFORMATION READS FROM LEFT TO RIGHT, AWAY FROM THE RING.
3. ITEMS ③ THRU ⑩ WILL BE SHIPPED SEPARATED FROM THE ASSEMBLY. PACKAGE PER MIL-P-116 IA-8.
4.
5. APPROXIMATE ASSEMBLY WEIGHT = 3 LBS, 1 OUNCE.
6. REFERENCE DRAWINGS:
   FAMILY TREE 6899958

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 3	2		8	6899957-002	WASHER, FLAT
	2		7	6899957-001	WASHER, FLAT
	2		6	6899956	STUD, SHOULDERED
	2		5	6899955	STUD, SHOULDERED AND STEPPED
	2		4	NAS 674V18	BOLT, HEX HD
	2		3	2899992	BOLT, IMU MOUNT
SEE NOTE 2	1		2	1004260-101	PLATE, IDENTIFICATION
	1		1	6899951-011	NAVIGATION BASE ASSY, LEM (FINAL MACH.)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950	6899950	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. Tamasi DATE 11 NOV 64
CHECKED C. Pruda 10 DEC 64
APPROVAL J. Hann 10 DEC 64
APPROVAL D. Hensley 11 DEC 64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE
ASSEMBLY -
LEM

CODE IDENT NO
SIZE D
6899950
SCALE —
SHEET 1 OF 1

MIL 10740-F

6899950

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		REVISIONS 15435			
A		REVISED PER DO 58783			EC
B	—	REVISED PER MXC200371	—	24 MAR 65	KWK EF
C		REVISED PER TDRR 17940 CLASS A RELEASE (UPGRADED)	—		WK
Ⓜ D		REVISED PER TDRR 19939.	—	22 JUN 65	JJJ JAC
E		REVISED PER TDRR 31552	—	21 OCT 66	EC RW

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SERIALIZE PER ND 1002023. APPLY ITEM ② CENTERED OVER PRE-EXISTING INSEPARABLE ASSEMBLY IDENTIFICATION MARK (6899951-011) SO THAT INFORMATION READS FROM LEFT TO RIGHT, AWAY FROM THE RING.
3. ITEMS ③ THRU ⑩ WILL BE SHIPPED SEPARATED FROM THE ASSEMBLY. PACKAGE PER MIL-P-116 IA-8.
4.
5. APPROXIMATE ASSEMBLY WEIGHT = 3 LBS, 1 OUNCE.
6. REFERENCE DRAWINGS:
   FAMILY TREE 6899958

SEE NOTE 3 (ITEMS 3 THRU 10)

SEE NOTE 2 (ITEM 2)

QUANTITY REQUIRED		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		4	-		10	NAS 674V19	BOLT, HEX CAP
		2	-		9	2021204	BUSHING, SLEEVING-IMU MOUNT
		2	2		8	6899957-002	WASHER, FLAT
		2	2		7	6899957-001	WASHER, FLAT
		2	2		6	6899956	STUD, SHOULDERED
		2	2		5	6899955	STUD, SHOULDERED AND STEPPED
		-	2		4	NAS 674V18	BOLT, HEX HD
		-	2		3	2899992	BOLT, IMU MOUNT
		1	1		2	1004260-101	PLATE, IDENTIFICATION
		1	1		1	6899951-011	NAVIGATION BASE ASSY, LEM (FINAL MACH.)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950	6899950	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamsen DATE 11 NOV 64
CHECKED C. Pinda 10 DEC 64
APPROVAL J. Hamm 10 DEC 64
APPROVAL D. Hensley 11 DEC 64
NASA APPROVAL W. J. Rhine 1-13-65
MIT APPROVAL 13 Jan 65

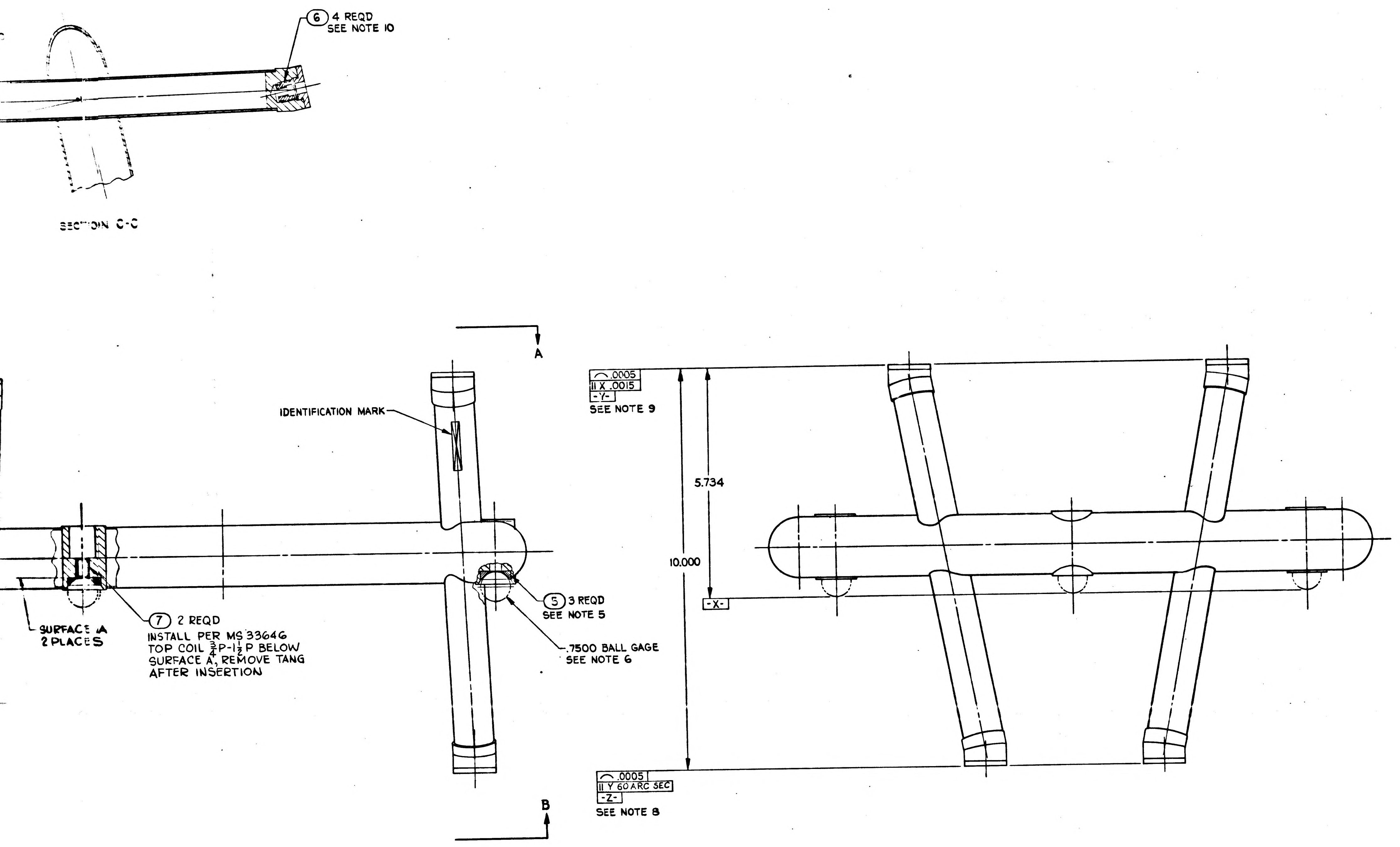
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY - LEM

CODE IDENT NO.
SIZE D
6899950
SCALE —
SHEET 1 OF 1

REVISIONS 15435

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APP'D
A		REVISED PER DD 58783		15 DEC 64	RL



6 4 REQD
SEE NOTE 10
SECTION C-C
A
IDENTIFICATION MARK
.0005
II X .0015
-Y-
SEE NOTE 9
5.734
10.000
-X-
SURFACE A
2 PLACES
7 2 REQD
INSTALL PER MS 33646
TOP COIL ¾P-1½P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
5 3 REQD
SEE NOTE 5
.7500 BALL GAGE
SEE NOTE 6
.0005
II Y 60 ARC SEC
-Z-
SEE NOTE 8
B

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 15435 DATE

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	2		7	MS 21209-F4-15	(1897059-204) INSERT, SCR LKG, HELICAL COIL
SEE NOTE 12	8		6	1010802-002	INSERT, FLOATING, LOCKING THD
	3		5	1899965	INSERT, MOUNTING
	16		4	MS 171494	PIN, SPRING
SEE NOTE 12	16		3	1010867-3	SCREW, FLAT HD, SELF LOCKING
	8		2	2899968	PAD, MOUNTING
	1		1	6899952	BASE, NAVIGATION, LEM (MACHINING)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950-011	6899950-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS ±.02 ±.005 ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamsen DATE 6 NOV 64
CHECKED C. Pinjda 9 DEC 64
APPROVAL 10 Dec 64
APPROVAL 10 DEC 64
NASA APPROVAL 1-13-65
MIT APPROVAL R. W. Bras 1/12/65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

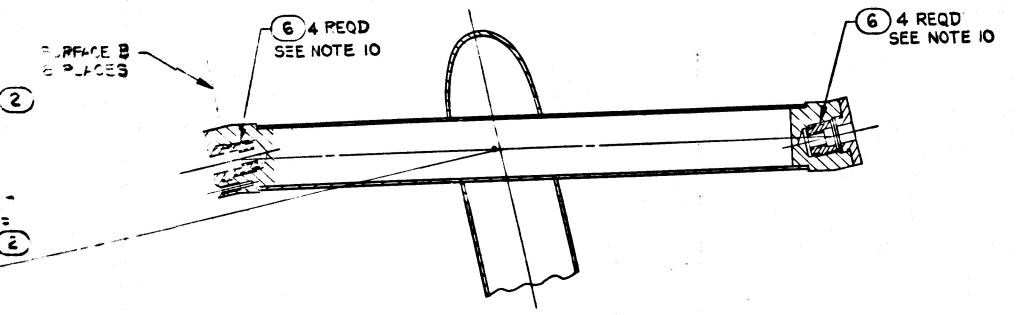
NAVIGATION BASE ASSEMBLY—
LEM
(FINAL MACHINING)

CODE IDENT NO.
SIZE J
6899951
SCALE FULL
SHEET 1 OF 1

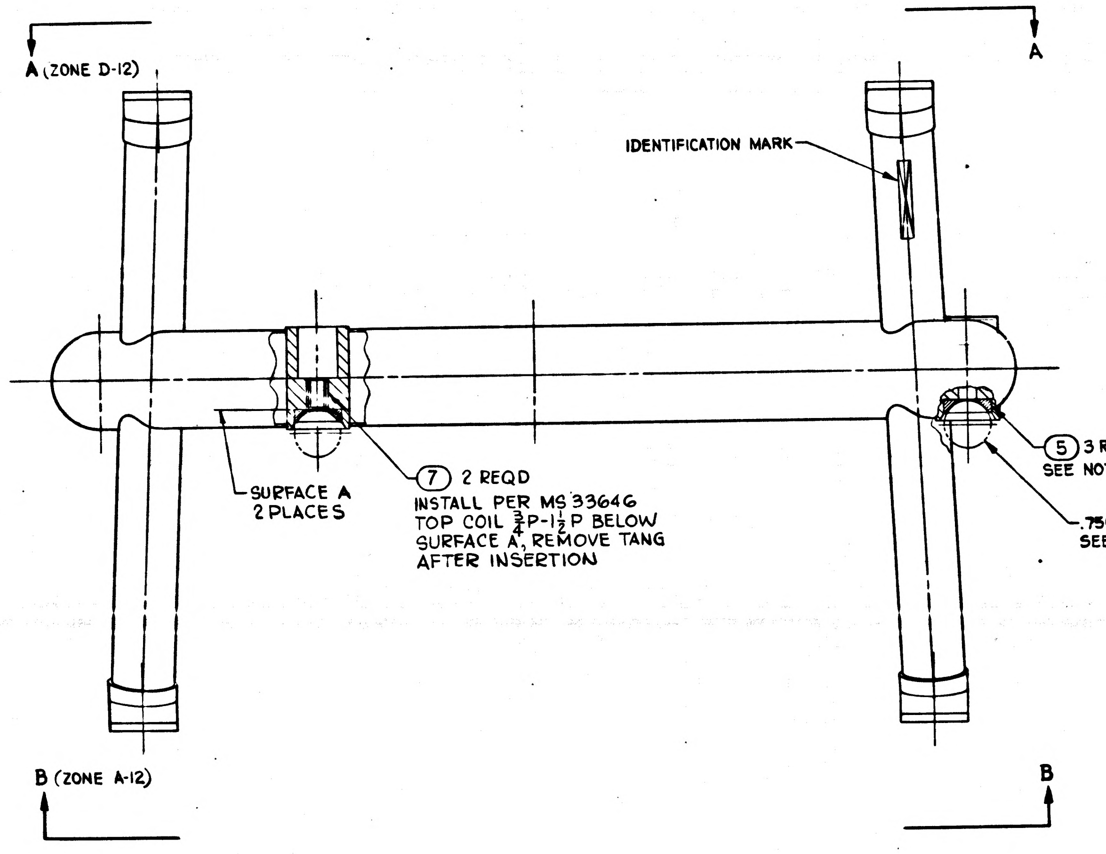
Charleston - 9 DEC 64

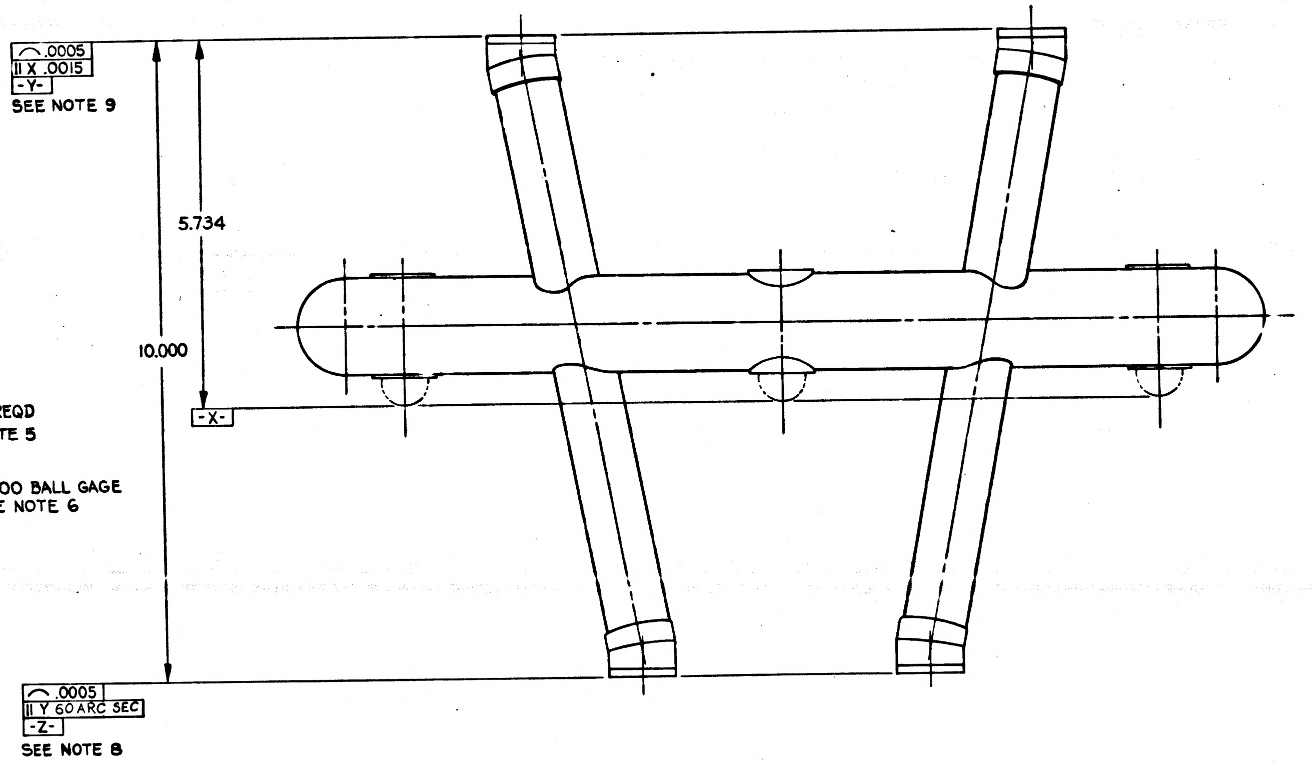
SYM	ZONE	DESCRIPTION	DWG NO	DATE	
A		REVISED PER 2058783		15 DEC 66	

REVISIONS 15-135


SURFACE B
6 PLACES
2
2
6 4 REQD
SEE NOTE 10
6 4 REQD
SEE NOTE 10

SECTION C-C


A (ZONE D-12)
A
IDENTIFICATION MARK
SURFACE A
2 PLACES
7 2 REQD
INSTALL PER MS 33646
TOP COIL ¾P-1½P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
5 3 REQD
SEE NOTE 5
.7500 BALL GAGE
SEE NOTE 6
B (ZONE A-12)
B


⌒ .0005
∥ X .0015
-Y-
SEE NOTE 9
5.734
10.000
-X-
⌒ .0005
∥ Y 60 ARC SEC
-Z-
SEE NOTE 8

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 131

SEE NOTE 12 (item 6)

SEE NOTE 12 (item 3)

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			2		7	MS 21209-F4-15	(397059-204) INSERT, SCR LKG HELICAL
			8		6	1010802-002	INSERT FLOATING, LOCKING THD
			3		5	6899965	INSERT, MOUNTING
			16		4	MS 171494	PIN, SPRING
			16		3	010867-3	SCREW, FLAT HD SELF LOCKING
			8		2	2899968	PAD, MOUNTING
			1		1	6899952	BASE NAVIGATION, LEM (MACHINING)
QUANTITY REQUIRED						LIST OF PARTS AND MATERIAL	

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950-011	6899950-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	±.02	+ —
−	±.005	−

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Timson DATE 6 NOV 64
CHECKED C. Fiordar 9 DEC 64
APPROVAL 10 Dec 64
APPROVAL DEC 64
NASA APPROVAL 1-13-65
MIT APPROVAL 1/12/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY
LEM
(FINAL MACHINING)

CODE IDENT NO.
SIZE J
6899951
SCALE FULL
SHEET

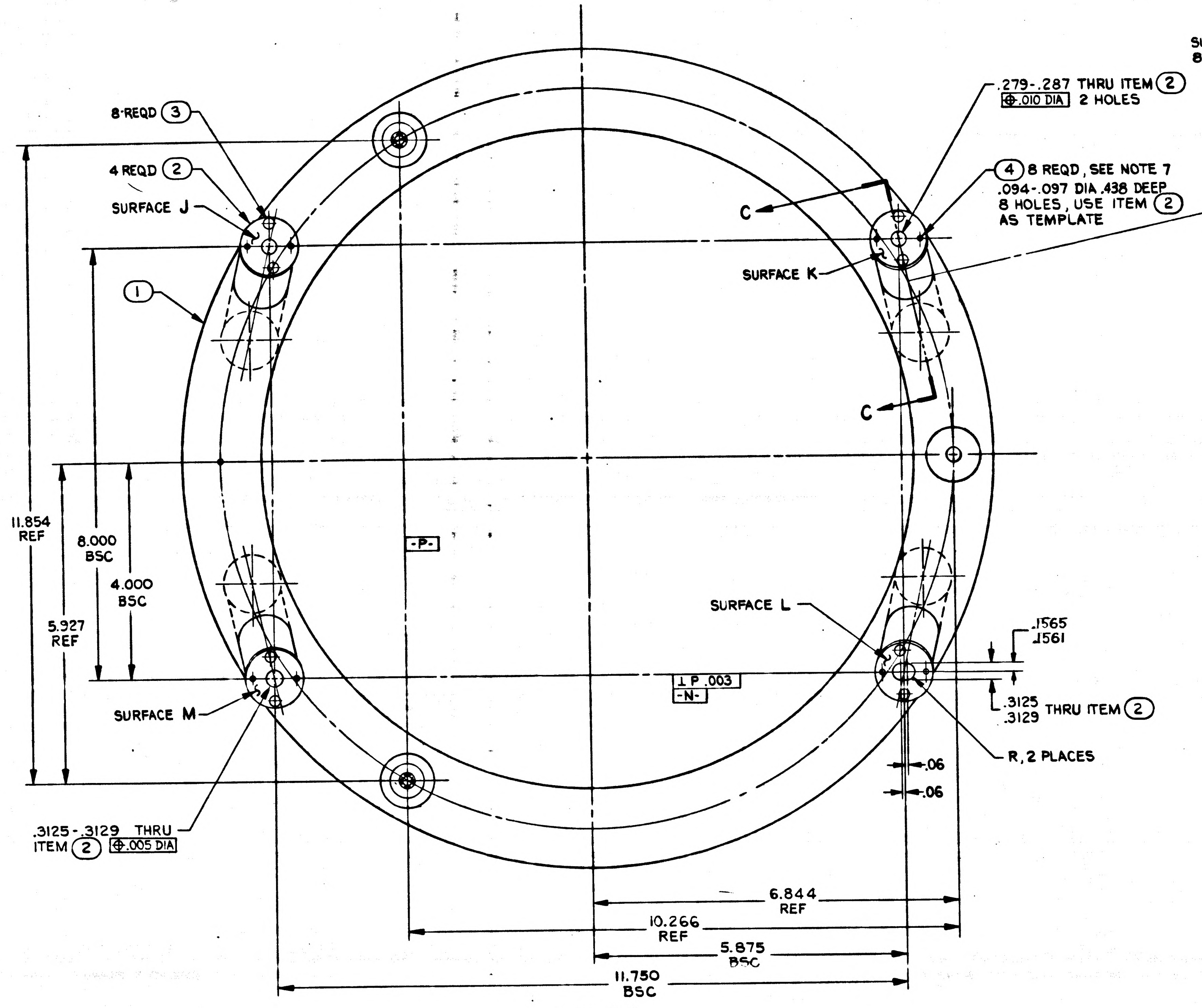
Charleston - 9 DEC 64

6899951

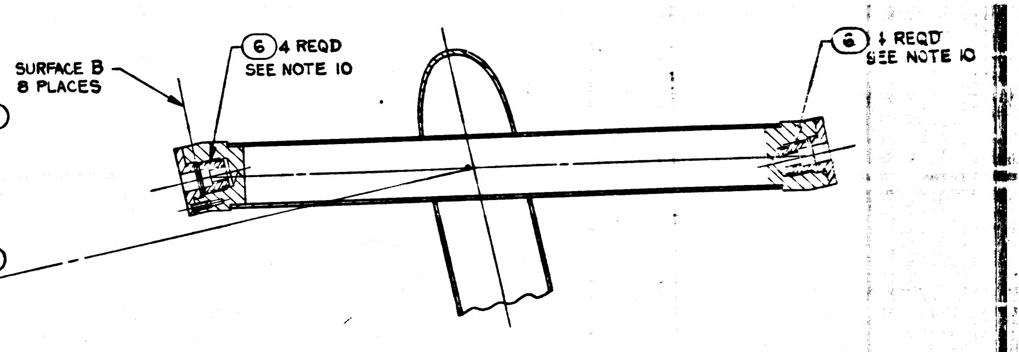
F-1

NOTES:

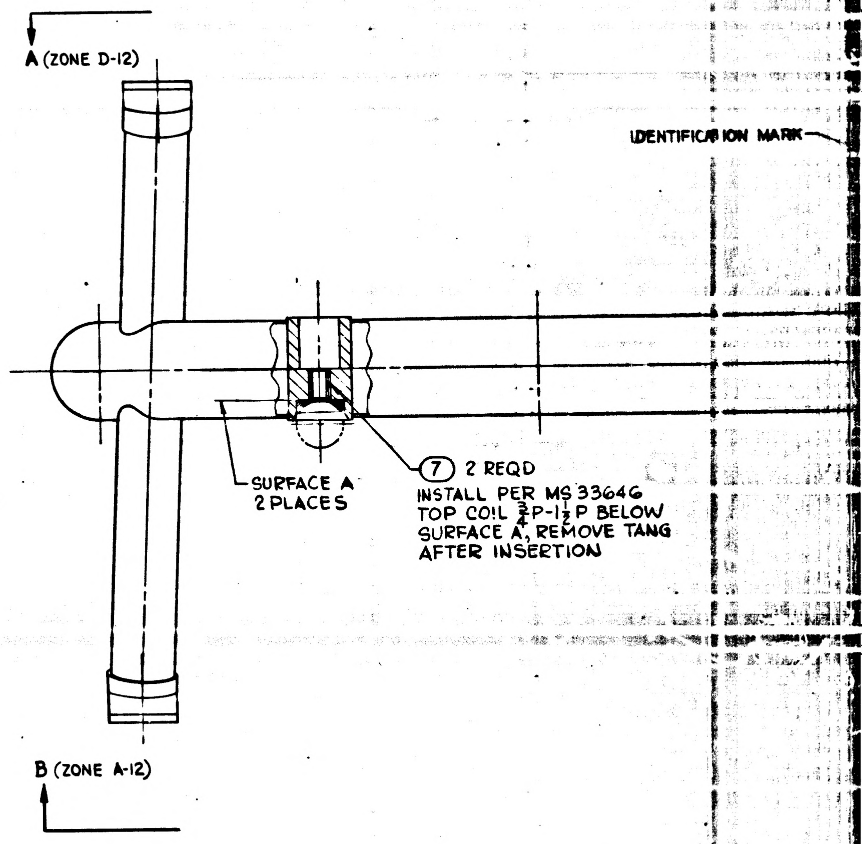
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   - A. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED $\overset{63}{\surd}$.
   - B. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
3. MUST BE FREE FROM BURRS.
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.
5. ITEM ⑤'S TO BE SUBJECTED TO 500 LBS AXIAL PRELOAD AFTER ASSEMBLY AND PRIOR TO ANY FINAL MACHINING.
6. THE SIZE AND SPHERICITY OF THE 3 GAGE BALLS MUST BE WITHIN A .000010 TOLERANCE ZONE.
7. INSERT PINS, ITEM ④, .05 BELOW SURFACES OF ITEM ② PRIOR TO FINISH MACHINING OF ITEM ②.
8. SURFACES E, F, G & H ESTABLISH DATUM -Z- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.
9. SURFACES J, K, L & M ESTABLISH DATUM -Y- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.
10. INSTALL ITEM ⑥ .01 TO .03 BELOW SURFACE B, 8 PLACES.
11. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
12. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING

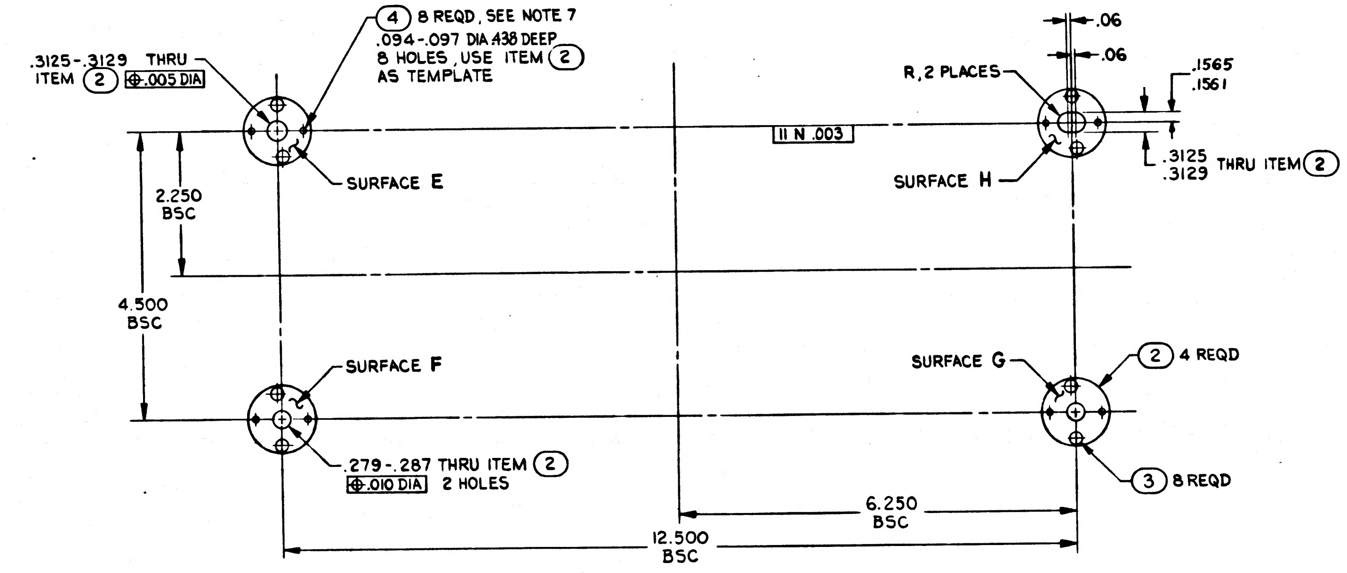

8 REQD ③
4 REQD ②
SURFACE J
①
.279-.287 THRU ITEM ②
⊕ .010 DIA 2 HOLES
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
C
C
SURFACE K
11.854
REF
8.000
BSC
4.000
BSC
5.927
REF
-P-
SURFACE L
.1565
.1561
⊥ P .003
-N-
.3125
.3129 THRU ITEM ②
R, 2 PLACES
.06
.06
SURFACE M
.3125-.3129 THRU
ITEM ② ⊕ .005 DIA
6.844
REF
10.266
REF
5.875
BSC
11.750
BSC

VIEW A-A


SURFACE B
8 PLACES
⑥ 4 REQD
SEE NOTE 10
⑥ 4 REQD
SEE NOTE 10

SECTION C-C

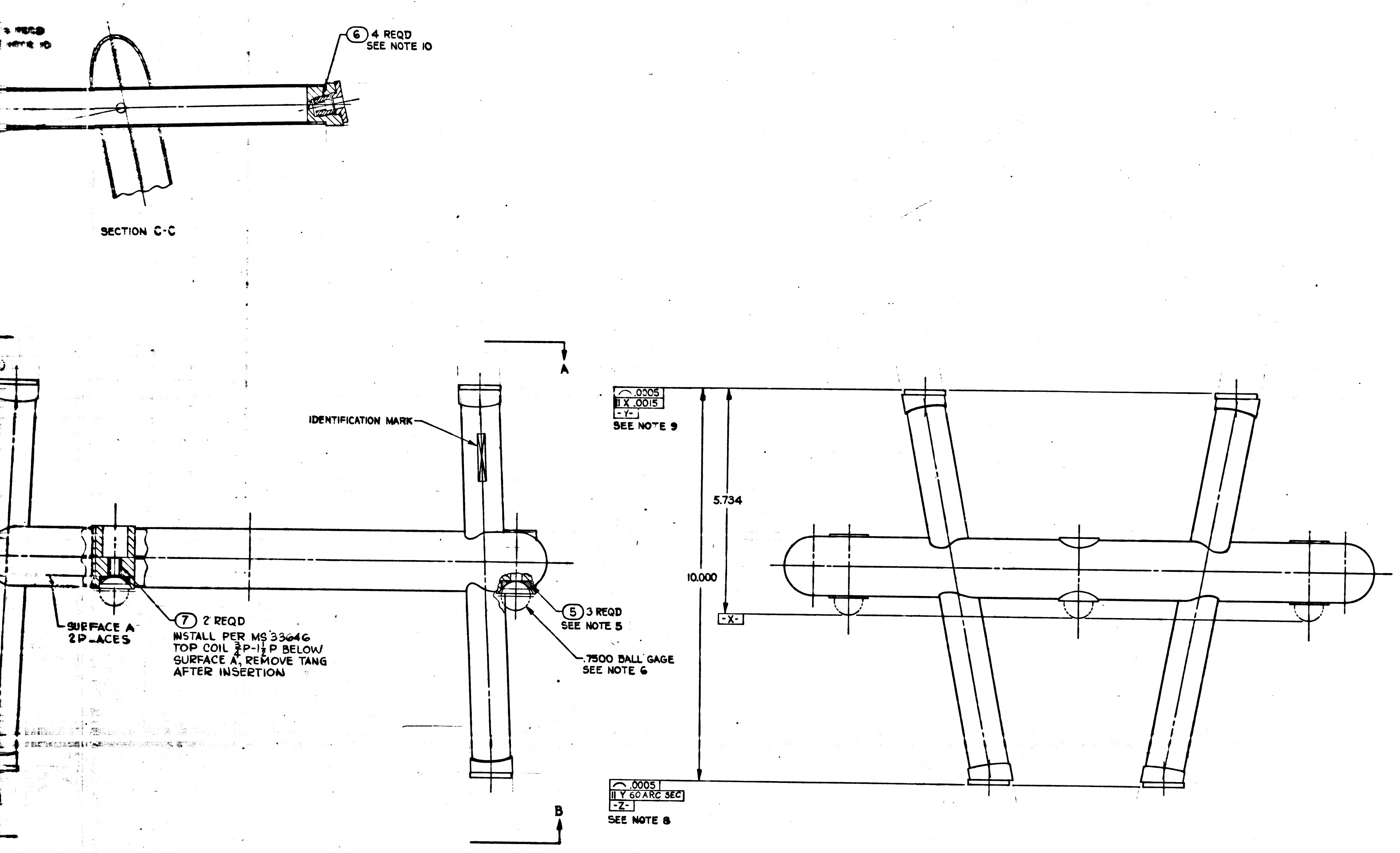

A (ZONE D-12)
IDENTIFICATION MARK
SURFACE A
2 PLACES
⑦ 2 REQD
INSTALL PER MS 33646
TOP COIL $\frac{3}{4}$P-1$\frac{1}{2}$P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
B (ZONE A-12)


.3125-.3129 THRU
ITEM ② ⊕ .005 DIA
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
.06
.06
R, 2 PLACES
.1565
.1561
∥ N .003
SURFACE E
SURFACE H
.3125
.3129 THRU ITEM ②
2.250
BSC
4.500
BSC
SURFACE F
SURFACE G
② 4 REQD
.279-.287 THRU ITEM ②
⊕ .010 DIA 2 HOLES
③ 8 REQD
6.250
BSC
12.500
BSC

PARTIAL VIEW B-B

6899951

REVISIONS 15435					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER 00 58783		15 DEC 64	
B	—	REVISED PER MXC200372	—	25 MAR 65	
C		REVISED PER TDRR (7941		4/1/65	



4 REQD
SEE NOTE 10
⑥ 4 REQD
SEE NOTE 10
SECTION C-C
IDENTIFICATION MARK
A
B
SURFACE A
2 PLACES
⑦ 2 REQD
INSTALL PER MS 33646
TOP COIL 3/4P-1 1/2P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
⑤ 3 REQD
SEE NOTE 5
.7500 BALL GAGE
SEE NOTE 6
.0005
X .0015
-Y-
SEE NOTE 9
5.734
10.000
-X-
.0005
Y 60 ARC SEC
-Z-
SEE NOTE 8

SEE NOTE 12

SEE NOTE 12

			2		7	MS 21209-F4-15	(1897059-204) INSERT, SCR LKG, HELICAL COIL
			8		6	1010802-002	INSERT, FLOATING, LOCKING THD
			3		5	1899965	INSERT, OPTICS MOUNTING
			16		4	MS 171494	PIN, SPRING
			16		3	1010867-3	SCREW, FLAT HD, SELF LOCKING
			8		2	2899968	PAD, MOUNTING
			1		1	6899952	BASE, NAVIGATION, LEM (MACHINING)
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	

6899950-011	6899950-011	-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamsen DATE 5 NOV 64
CHECKED C. Pagda 9 DEC 64
APPROVAL 10 DEC 64
APPROVAL DEC 64
NASA APPROVAL 1-13-65
R. W. Geas 1/12/65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY—
LEM
(FINAL MACHINING)

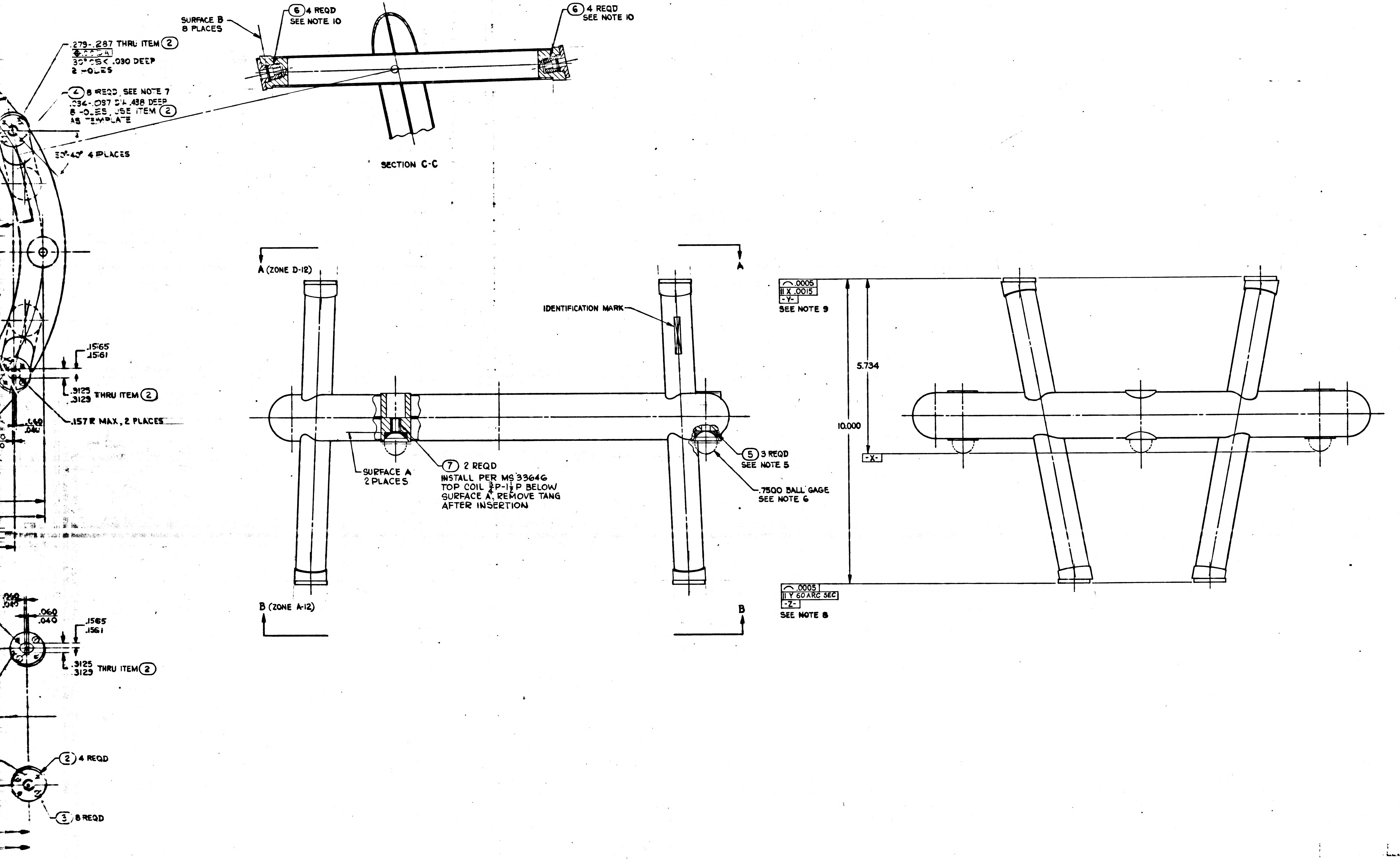
CODE IDENT NO. SIZE J 6899951
SCALE FULL SHEET 1 OF 1

Charleston - 9 DEC 64

MASTER

6899951 REV B SH 1

6899951 B


SURFACE B
8 PLACES
6 4 REQD
SEE NOTE 10
6 4 REQD
SEE NOTE 10
.279-.287 THRU ITEM 2
30° CSK .030 DEEP
2 HOLES
4 8 REQD, SEE NOTE 7
.034-.097 DIA .438 DEEP
8 HOLES, USE ITEM 2
AS TEMPLATE
30°-40° 4 PLACES
SECTION C-C
A (ZONE D-12)
A
IDENTIFICATION MARK
.0005
X .0015
-Y-
SEE NOTE 9
5.734
10.000
.1565
.1561
.3125
.3129 THRU ITEM 2
.157 R MAX, 2 PLACES
.060
.040
SURFACE A
2 PLACES
7 2 REQD
INSTALL PER MS 33646
TOP COIL ¾P-1½P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
5 3 REQD
SEE NOTE 5
.7500 BALL GAGE
SEE NOTE 6
-X-
.0005
Y 60 ARC SEC
-Z-
SEE NOTE 8
B (ZONE A-12)
B
.060
.040
.1565
.1561
.3125
.3129 THRU ITEM 2
2 4 REQD
3 8 REQD

SEE NOTE 12

SEE NOTE 12

QUANTITY REQUIRED -011	EFFECTIVITY	ITEM NO.	PART OR ...
2		7	MS 2120
8		6	1010
3		5	18999
6		4	MS 1
16		3	101C8
8		2	28999
1		1	68999

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950-011	6899950-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

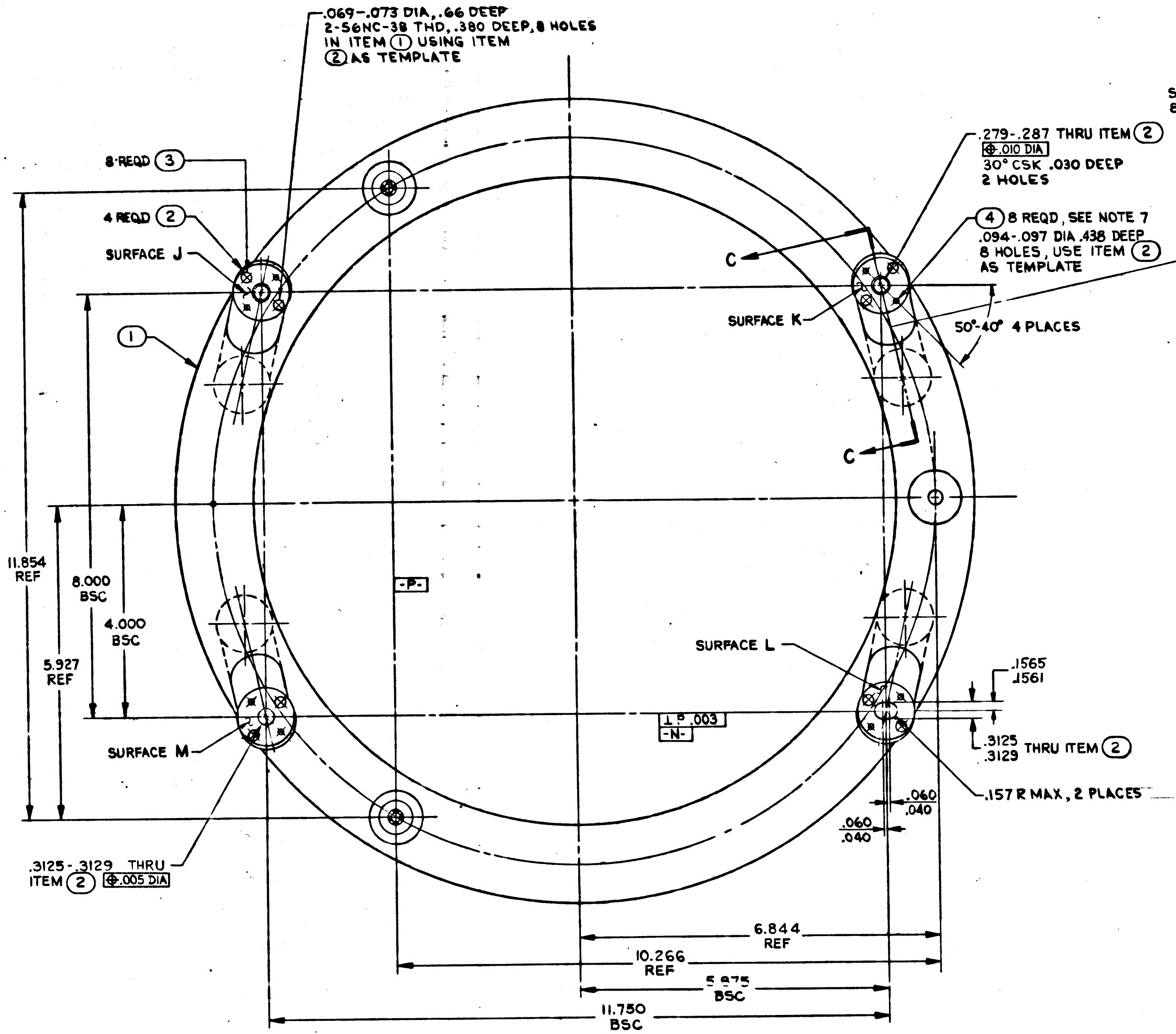
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02 ±.005
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

SPARK PLUG DIVISION
MILWAUKEE, WISC
DR R. Tomsang
CHECKED C. Pizda
APPROVAL
R. Brass

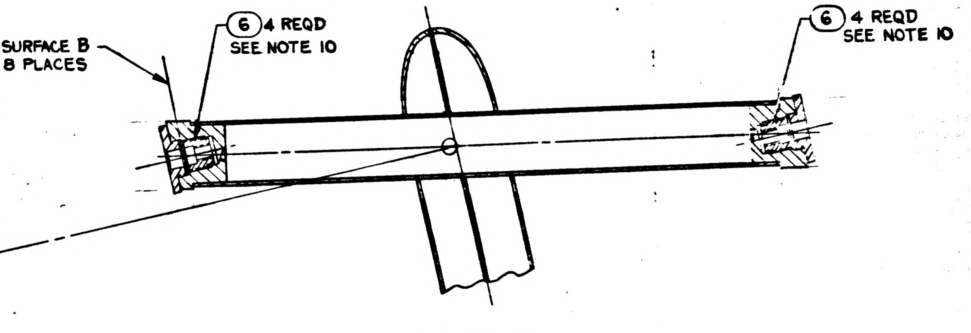
6899951 REV B SH 1

NOTES:

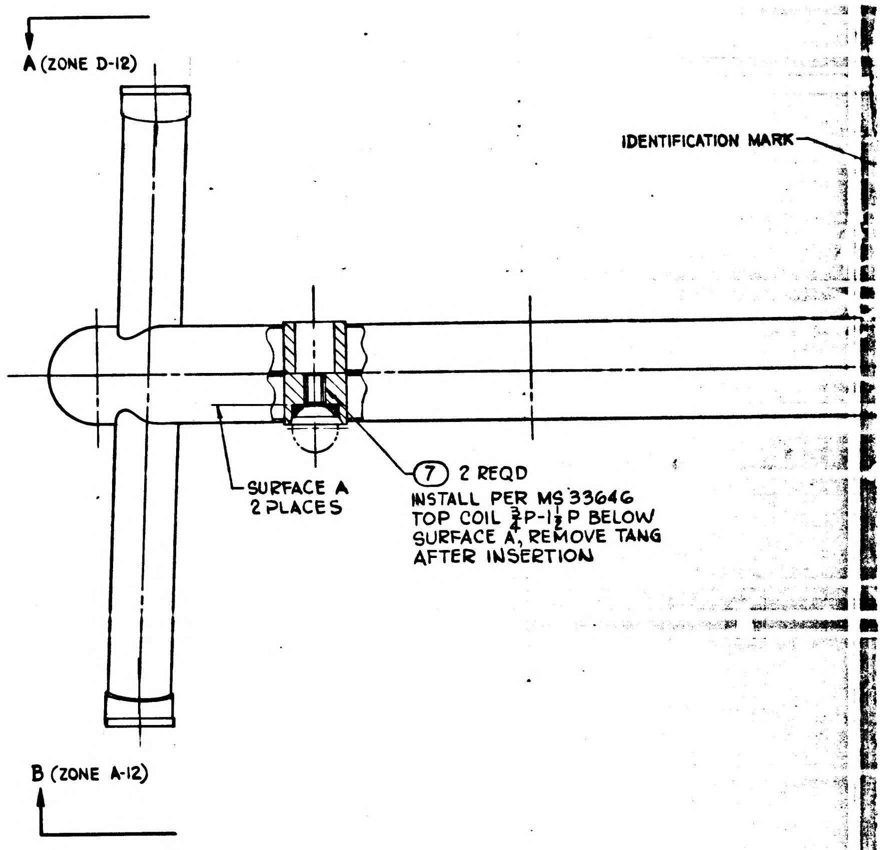
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   - A. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.
   - B. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
3. MUST BE FREE FROM BURRS.
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.
5. ITEM ⑤ IS TO BE SUBJECTED TO 500 LBS AXIAL PRELOAD AFTER ASSEMBLY AND PRIOR TO ANY FINAL MACHINING.
6. THE SIZE AND SPHERICITY OF THE 3 GAGE BALLS MUST BE WITHIN A .000010 TOLERANCE ZONE.
7. INSERT PINS, ITEM ④, .05 BELOW SURFACES OF ITEM ② PRIOR TO FINISH MACHINING OF ITEM ②. DO NOT REMOVE ITEM ② AFTER PIN INSTALLATION.
8. SURFACES E, F, G & H ESTABLISH DATUM -Z- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.
9. SURFACES J, K, L & M ESTABLISH DATUM -Y- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.
10. INSTALL ITEM ⑥ .01 TO .03 BELOW SURFACE B, 8 PLACES.
11. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
12. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING

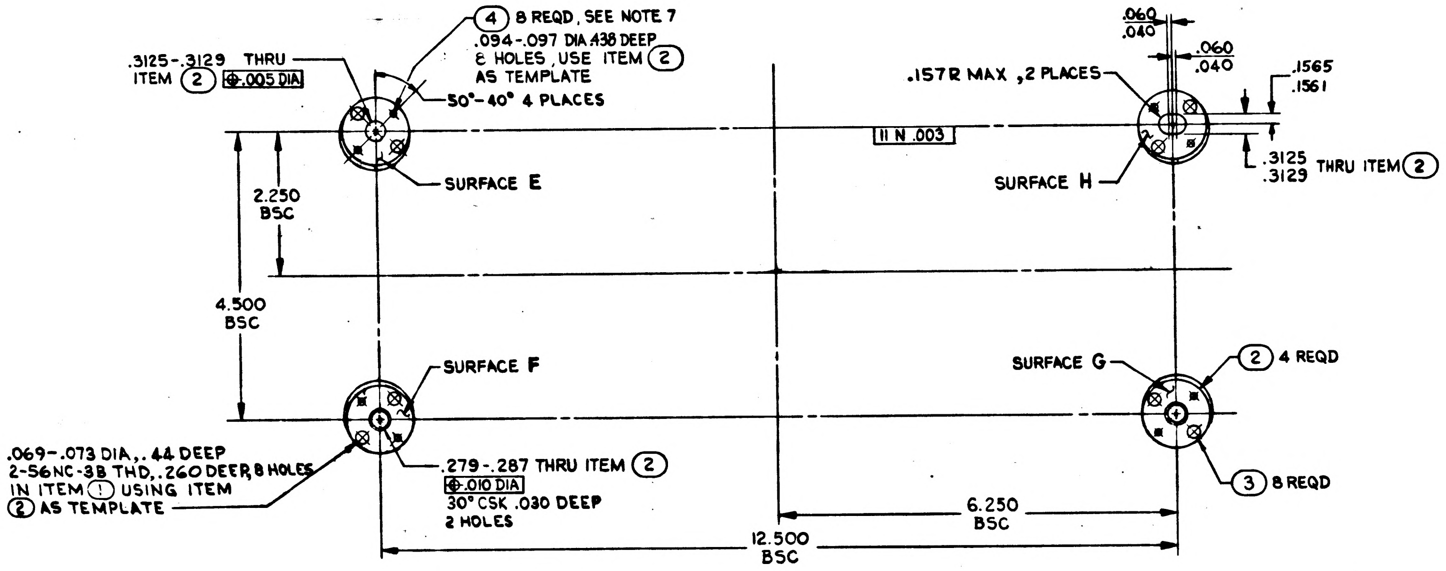

.069-.073 DIA, .66 DEEP
2-56NC-3B THD, .380 DEEP, 8 HOLES
IN ITEM ① USING ITEM
② AS TEMPLATE
8 REQD ③
4 REQD ②
SURFACE J
①
.279-.287 THRU ITEM ②
⌖.010 DIA
30° CSK .030 DEEP
2 HOLES
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
C
SURFACE K
50°-40° 4 PLACES
C
-P-
11.854
REF
8.000
BSC
4.000
BSC
5.927
REF
SURFACE L
.1565
.1561
⊥ P .003
-N-
.3125
.3129
THRU ITEM ②
SURFACE M
.157 R MAX, 2 PLACES
.060
.040
.060
.040
.3125-.3129 THRU
ITEM ② ⌖.005 DIA
6.844
REF
10.266
REF
5.875
BSC
11.750
BSC

VIEW A-A


SURFACE B
8 PLACES
⑥ 4 REQD
SEE NOTE 10
⑥ 4 REQD
SEE NOTE 10

SECTION C-C

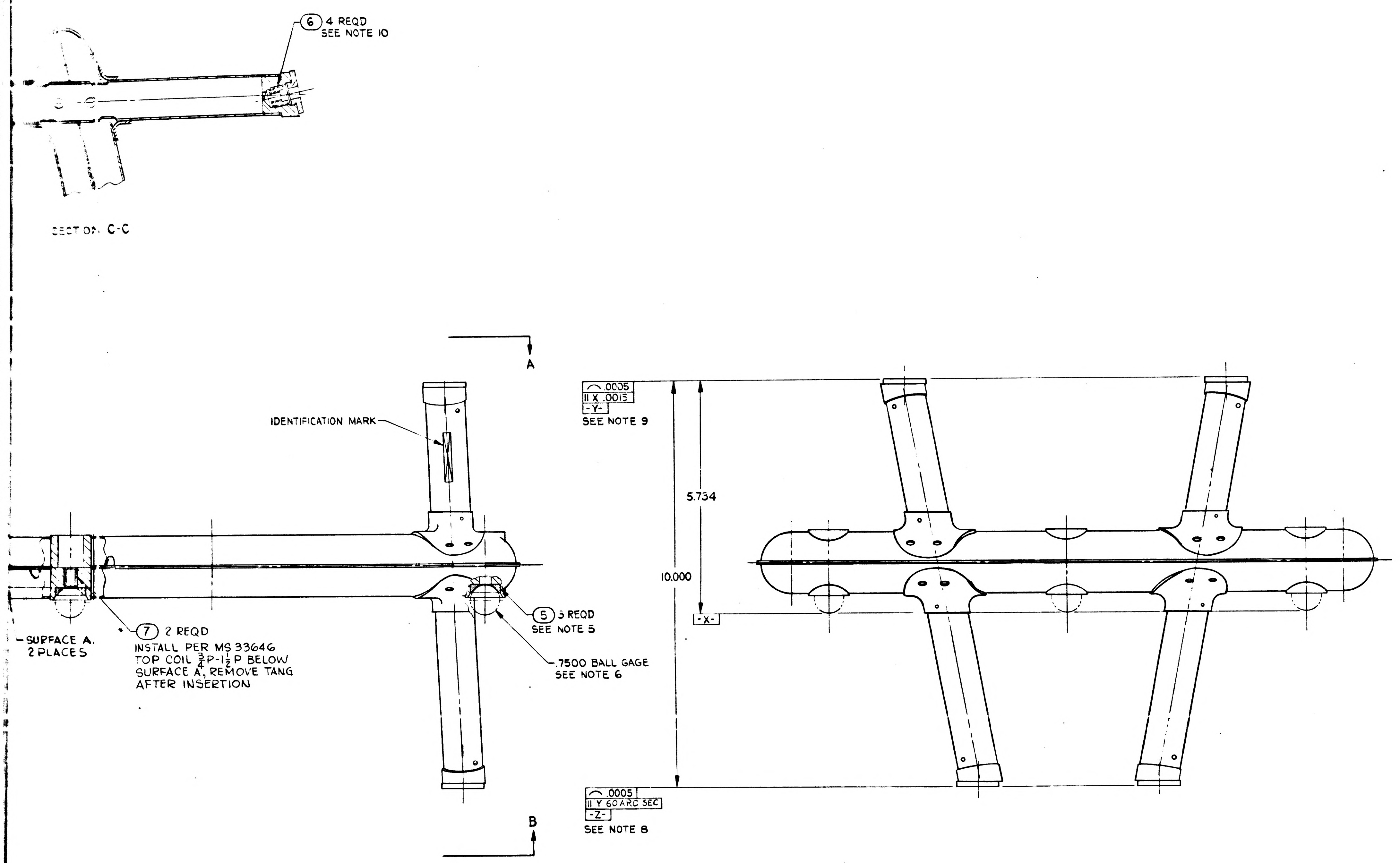

A (ZONE D-12)
IDENTIFICATION MARK
SURFACE A
2 PLACES
⑦ 2 REQD
INSTALL PER MS 33646
TOP COIL $\frac{3}{4}$P-1$\frac{1}{2}$P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
B (ZONE A-12)


.3125-.3129 THRU
ITEM ② ⌖.005 DIA
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
50°-40° 4 PLACES
SURFACE E
.060
.040
.060
.040
.157 R MAX, 2 PLACES
.1565
.1561
∥ N .003
SURFACE H
.3125
.3129
THRU ITEM ②
2.250
BSC
4.500
BSC
SURFACE F
SURFACE G
② 4 REQD
.069-.073 DIA, .44 DEEP
2-56NC-3B THD, .260 DEEP, 8 HOLES
IN ITEM ① USING ITEM
② AS TEMPLATE
.279-.287 THRU ITEM ②
⌖.010 DIA
30° CSK .030 DEEP
2 HOLES
③ 8 REQD
6.250
BSC
12.500
BSC

PARTIAL VIEW B-B

6899951 REV B SH 1

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER 0058783		[illegible]	RC
B	—	REVISED PER MXC200372	—	25 MAR 65	[illegible]
C		REVISED PER TDRR 17441		[illegible]	[illegible]
D		REVISED PER TDRR 19940		22 JUN 65	[illegible]



⑥ 4 REQD
SEE NOTE 10
SECTION C-C
A
B
IDENTIFICATION MARK
SURFACE A
2 PLACES
⑦ 2 REQD
INSTALL PER MS 33646
TOP COIL ¾P-1½P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
⑤ 3 REQD
SEE NOTE 5
.7500 BALL GAGE
SEE NOTE 6
.0005
II X .0015
-Y-
SEE NOTE 9
5.734
10.000
-X-
.0005
II Y 60 ARC SEC
-Z-
SEE NOTE 8

	QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				011				
				2		7	MS 2.209-F4-15	(1897059-204) INSERT SCR LKG, HELICAL COIL
SEE NOTE 12				8		6	1010802-002	INSERT FLOATING LOCKING THD
				3		5	1899965	INSERT, OPTICS MOUNTING
				16		4	MS 171494	PIN SPRING
SEE NOTE 12				16		3	1010867-3	SCREW, FLAT HD SELF LOCKING
				8		2	2899968	PAD MOUNTING
				1		1	6899952	BASE NAVIGATION LEM (MACHINING)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950-011	6899950-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — −
DECIMALS ±.02 ±.005
ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Timson DATE 6 NOV 64
CHECKED C. Pizzola 9 DEC 64
APPROVAL [illegible] 10 Dec 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY—
LEM
(FINAL MACHINING)

CODE IDENT NO.
SIZE J
6899951
SCALE FULL
SHEET 1 OF 1

6899951 D SH 1

2/6899951

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. UNLESS OTHERWISE SPECIFIED:
   A. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$.
   B. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.

3. MUST BE FREE FROM BURRS.

4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.

5. ITEM ⑤ IS TO BE SUBJECTED TO 500 LBS AXIAL PRELOAD AFTER ASSEMBLY AND PRIOR TO ANY FINAL MACHINING.

6. THE SIZE AND SPHERICITY OF THE 3 GAGE BALLS MUST BE WITHIN A .000010 TOLERANCE ZONE.

7. INSERT PINS, ITEM ④, .05 BELOW SURFACES OF ITEM ② PRIOR TO FINISH MACHINING OF ITEM ②. DO NOT REMOVE ITEM ② AFTER PIN INSTALLATION.

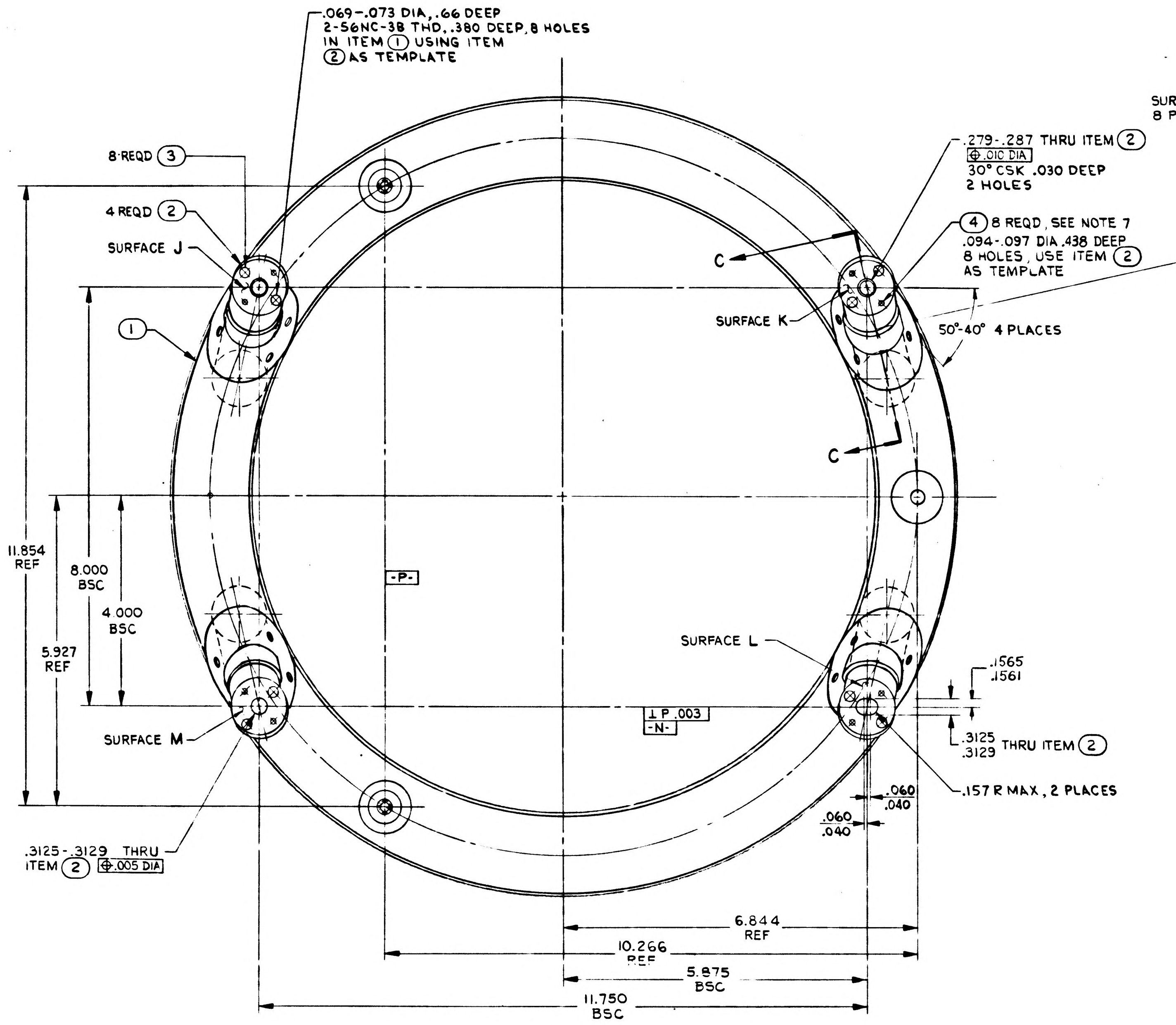
8. SURFACES E, F, G & H ESTABLISH DATUM -Z- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.

9. SURFACES J, K, L & M ESTABLISH DATUM -Y- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.

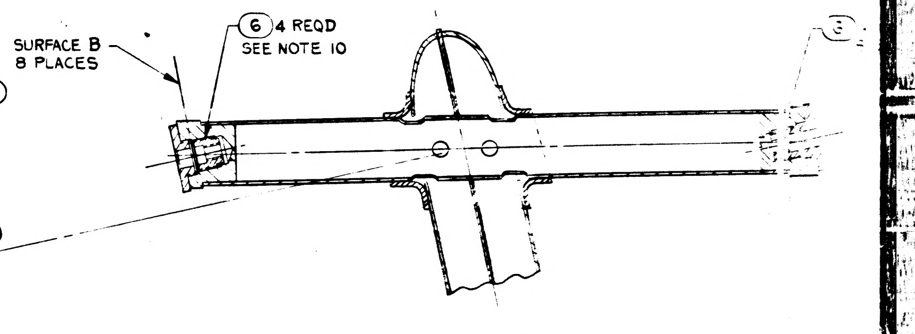
10. INSTALL ITEM ⑥ .01 TO .03 BELOW SURFACE B, 8 PLACES.

11. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

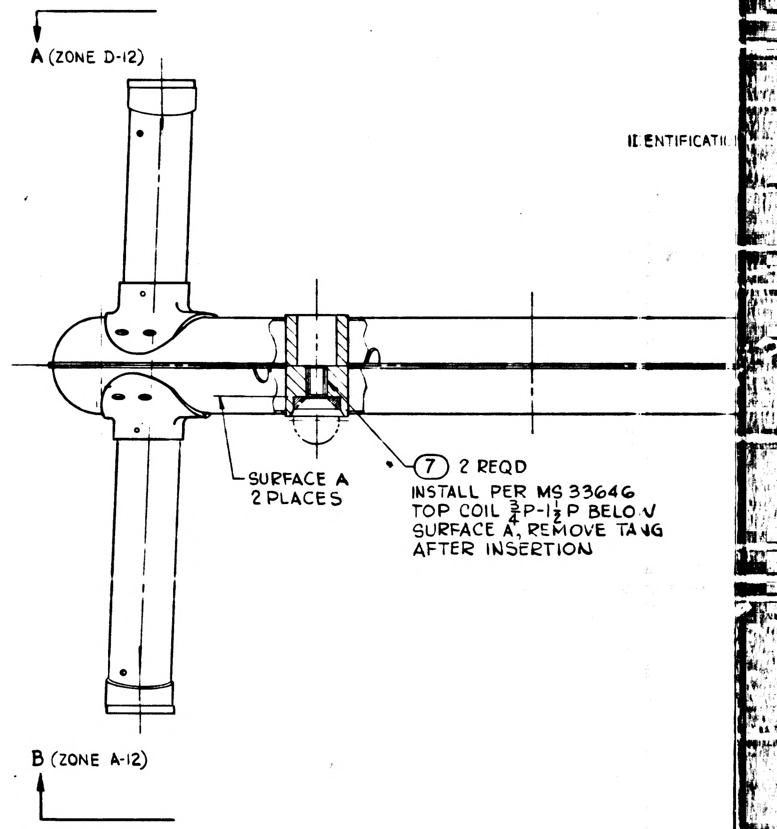
12. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING


.069-.073 DIA, .66 DEEP
2-56NC-3B THD, .380 DEEP, 8 HOLES
IN ITEM ① USING ITEM
② AS TEMPLATE
8 REQD ③
4 REQD ②
SURFACE J
①
.279-.287 THRU ITEM ②
⌖ .010 DIA
30° CSK .030 DEEP
2 HOLES
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
C
C
SURFACE K
50°-40° 4 PLACES
11.854
REF
8.000
BSC
4.000
BSC
5.927
REF
-P-
SURFACE L
.1565
.1561
⊥ P .003
-N-
.3125
.3129 THRU ITEM ②
SURFACE M
.157 R MAX, 2 PLACES
.060
.040
.060
.040
.3125-.3129 THRU
ITEM ② ⌖ .005 DIA
6.844
REF
10.266
REF
5.875
BSC
11.750
BSC

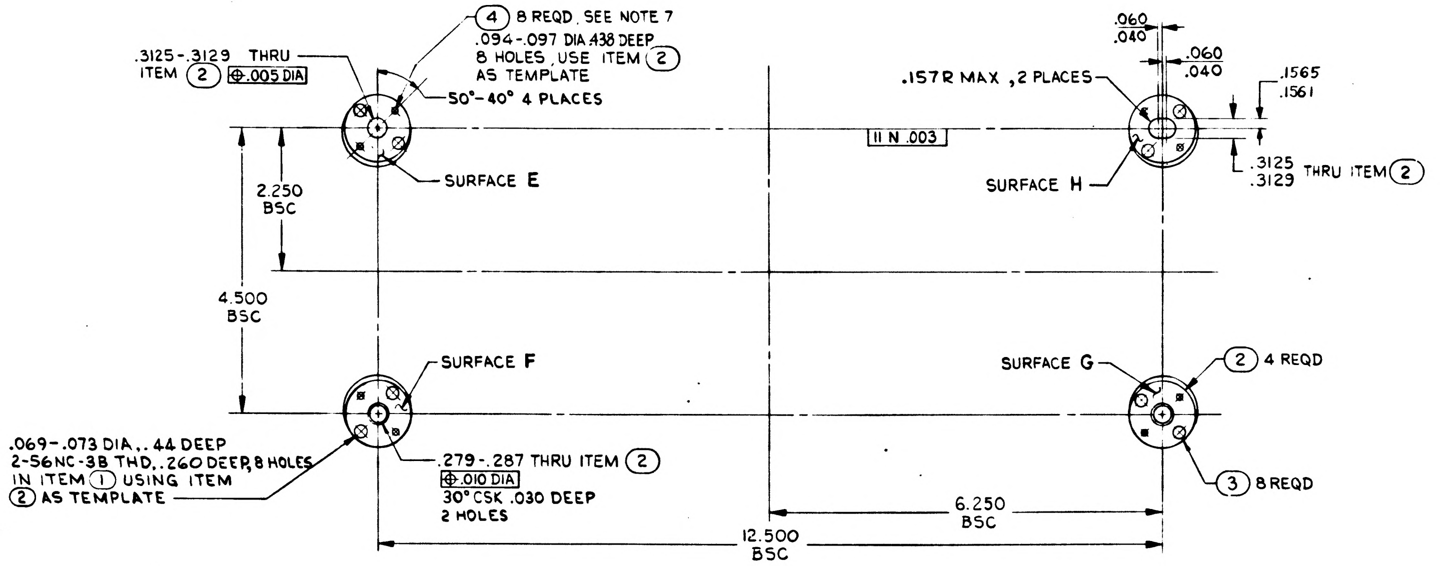
VIEW A-A


SURFACE B
8 PLACES
⑥ 4 REQD
SEE NOTE 10

SECTION C-C


A (ZONE D-12)
SURFACE A
2 PLACES
⑦ 2 REQD
INSTALL PER MS 33646
TOP COIL $\frac{3}{4}$P-1$\frac{1}{2}$P BELOW
SURFACE A, REMOVE TANG
AFTER INSERTION
B (ZONE A-12)

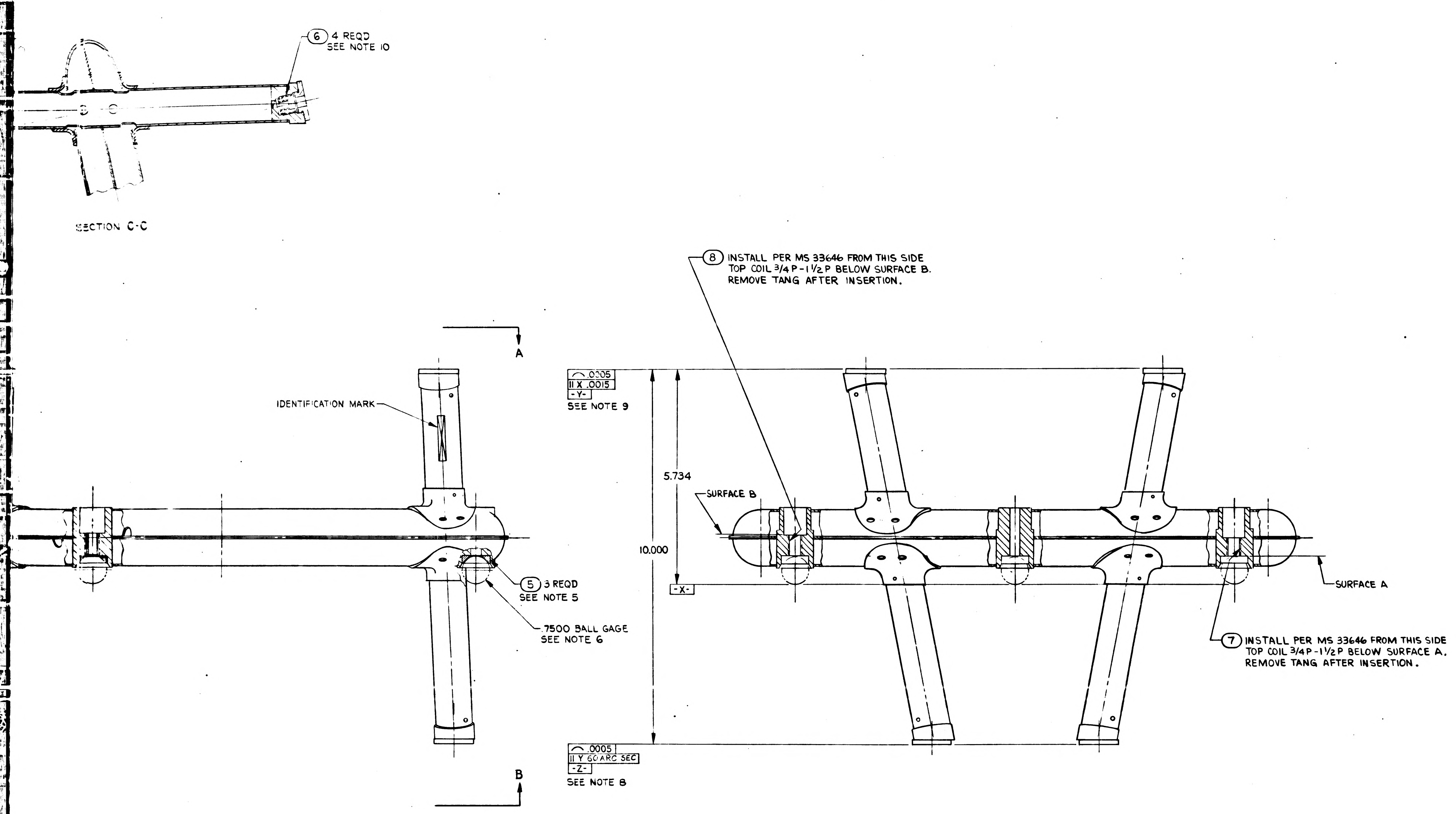
IDENTIFICATI


.3125-.3129 THRU
ITEM ② ⌖ .005 DIA
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
50°-40° 4 PLACES
SURFACE E
.060
.040
.060
.040
.157 R MAX, 2 PLACES
.1565
.1561
∥ N .003
.3125
.3129 THRU ITEM ②
SURFACE H
2.250
BSC
4.500
BSC
SURFACE F
SURFACE G
② 4 REQD
.069-.073 DIA, .44 DEEP
2-56NC-3B THD, .260 DEEP, 8 HOLES
IN ITEM ① USING ITEM
② AS TEMPLATE
.279-.287 THRU ITEM ②
⌖ .010 DIA
30° CSK .030 DEEP
2 HOLES
③ 8 REQD
6.250
BSC
12.500
BSC

PARTIAL VIEW B-B

3

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER 0058783		15 DEC 64	RL
B	—	REVISED PER MXC 200372	—	25 MAR 65	
C		REVISED PER TDRR 17941		4/1/65	
D		REVISED PER TDRR 19940		22 JUN 65	
E		REVISED PER TDRR 26546		2 MAR 66	



⑥ 4 REQD
SEE NOTE 10
C
C
SECTION C-C
A
IDENTIFICATION MARK
⑤ 3 REQD
SEE NOTE 5
.7500 BALL GAGE
SEE NOTE 6
B
.0005
II X .0015
-Y-
SEE NOTE 9
5.734
10.000
SURFACE B
-X-
SURFACE A
.0005
II Y 60 ARC SEC
-Z-
SEE NOTE 8

⑧ INSTALL PER MS 33646 FROM THIS SIDE
TOP COIL 3/4 P - 1 1/2 P BELOW SURFACE B.
REMOVE TANG AFTER INSERTION.

⑦ INSTALL PER MS 33646 FROM THIS SIDE
TOP COIL 3/4 P - 1 1/2 P BELOW SURFACE A.
REMOVE TANG AFTER INSERTION.

	QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				011				
				1		8	MS 21209-F5-15	(1897059-205) INSERT, SCR LKG, HELICAL COIL
				1		7	MS 21209-F4-15	(1897059-204) INSERT SCR LKG, HELICAL COIL
SEE NOTE 12				8		6	1010802-002	INSERT FLOATING LOCKING THD
				3		5	1899965	INSERT, OPTICS MOUNTING
				16		4	MS 171494	PIN, SPRING
SEE NOTE 12				16		3	1010867-3	SCREW, FLAT HD SELF LOCKING
				8		2	2899968	PAD, MOUNTING
				1		1	6899952	BASE, NAVIGATION LEM (MACHINING)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6899950-011	6899950-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	± .02	+ —
−	± .005	−

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN B. Jensen DATE 2 NOV 64
CHECKED C Pizzola 9 DEC 64
APPROVAL [illegible] 10 DEC 64
APPROVAL [illegible] DEC 64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY-
LEM
(FINAL MACHINING)

CODE IDENT NO
SIZE J
6899951
SCALE FULL
SHEET 1 OF 1

6899951 E

6899951 E

27/6899951

6899951

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. UNLESS OTHERWISE SPECIFIED:
   A. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$.
   B. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.

3. MUST BE FREE FROM BURRS.

4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.

5. ITEM ⑤ IS TO BE SUBJECTED TO 500 LBS AXIAL PRELOAD AFTER ASSEMBLY AND PRIOR TO ANY FINAL MACHINING.

6. THE SIZE AND SPHERICITY OF THE 3 GAGE BALLS MUST BE WITHIN A .000010 TOLERANCE ZONE.

7. INSERT PINS, ITEM ④, .05 BELOW SURFACES OF ITEM ② PRIOR TO FINISH MACHINING OF ITEM ②. DO NOT REMOVE ITEM ② AFTER PIN INSTALLATION.

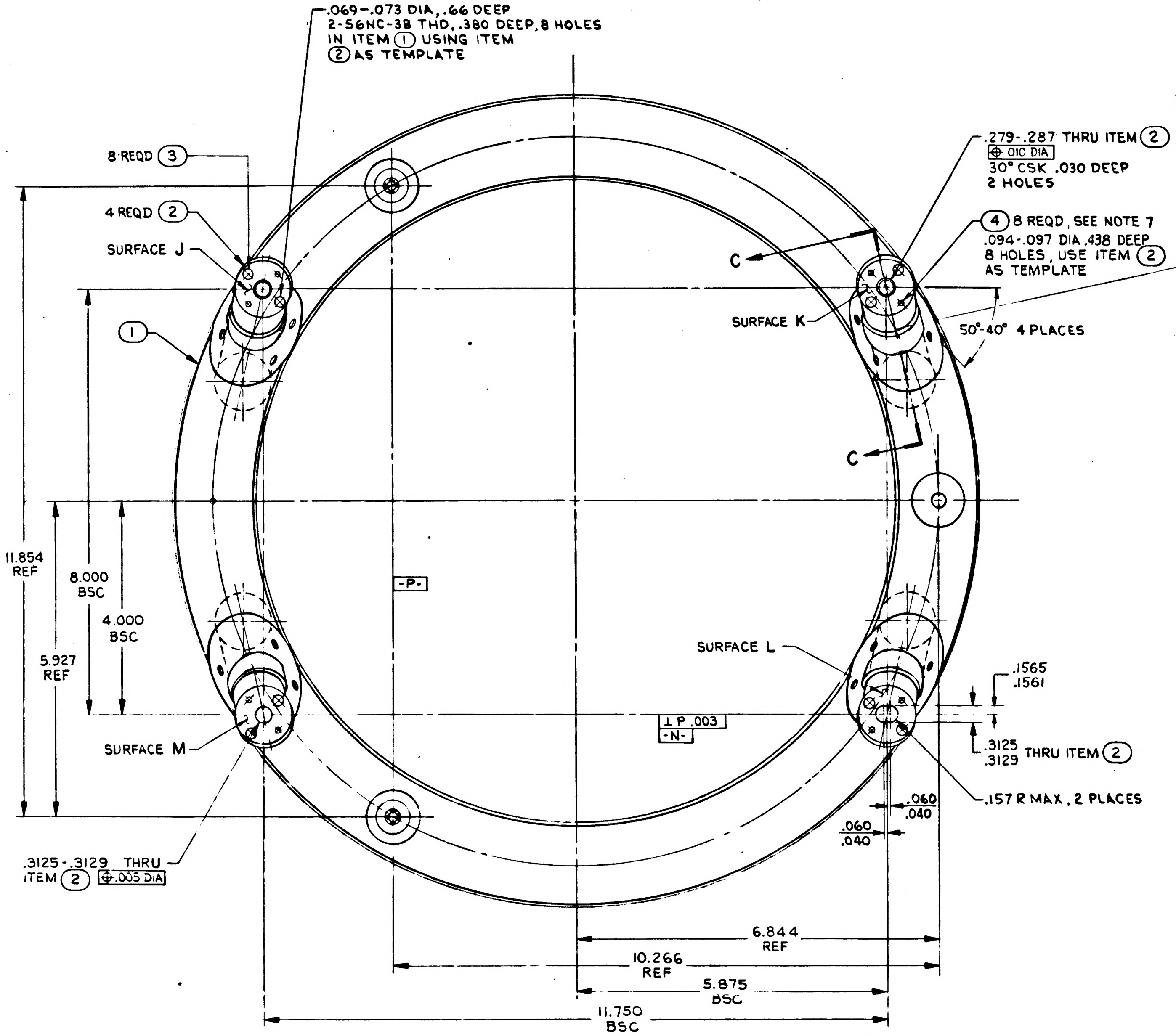
8. SURFACES E, F, G & H ESTABLISH DATUM -Z- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.

9. SURFACES J, K, L & M ESTABLISH DATUM -Y- WHEREIN ALL POINTS ON EACH SURFACE MUST LIE WITHIN A .0005 TOLERANCE ZONE.

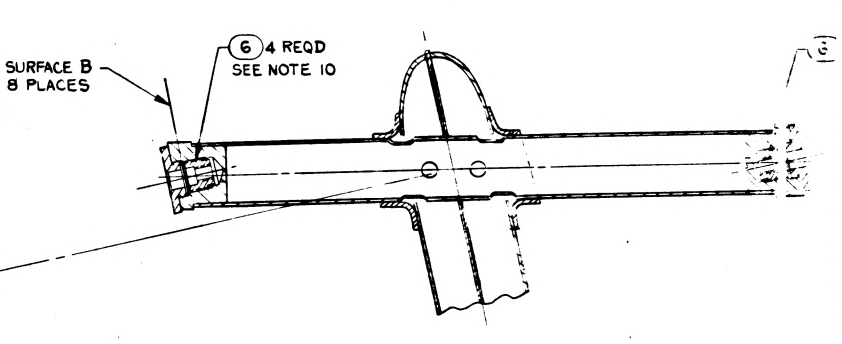
10. INSTALL ITEM ⑥ .01 TO .03 BELOW SURFACE B, 8 PLACES.

11. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

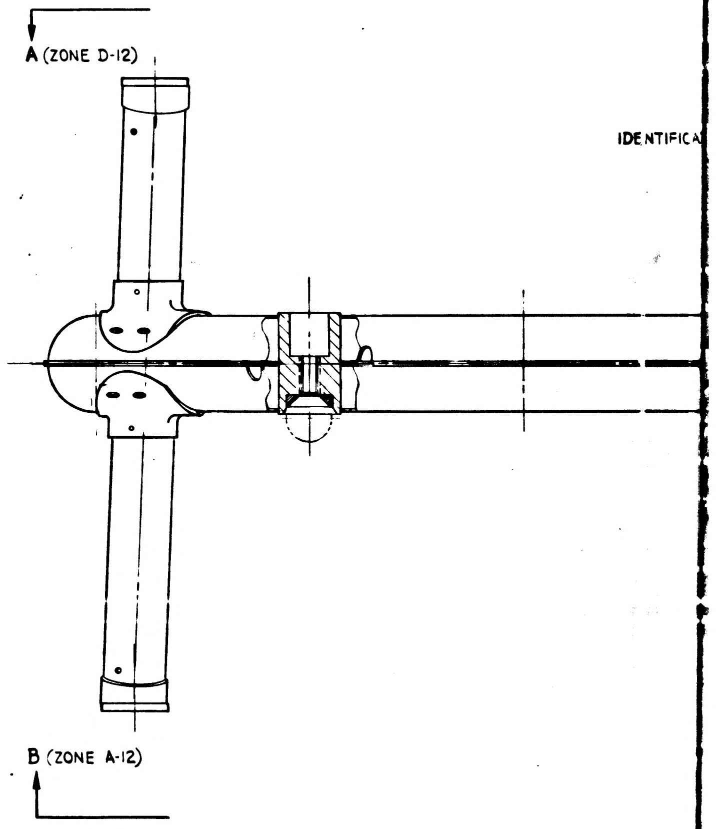
12. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING

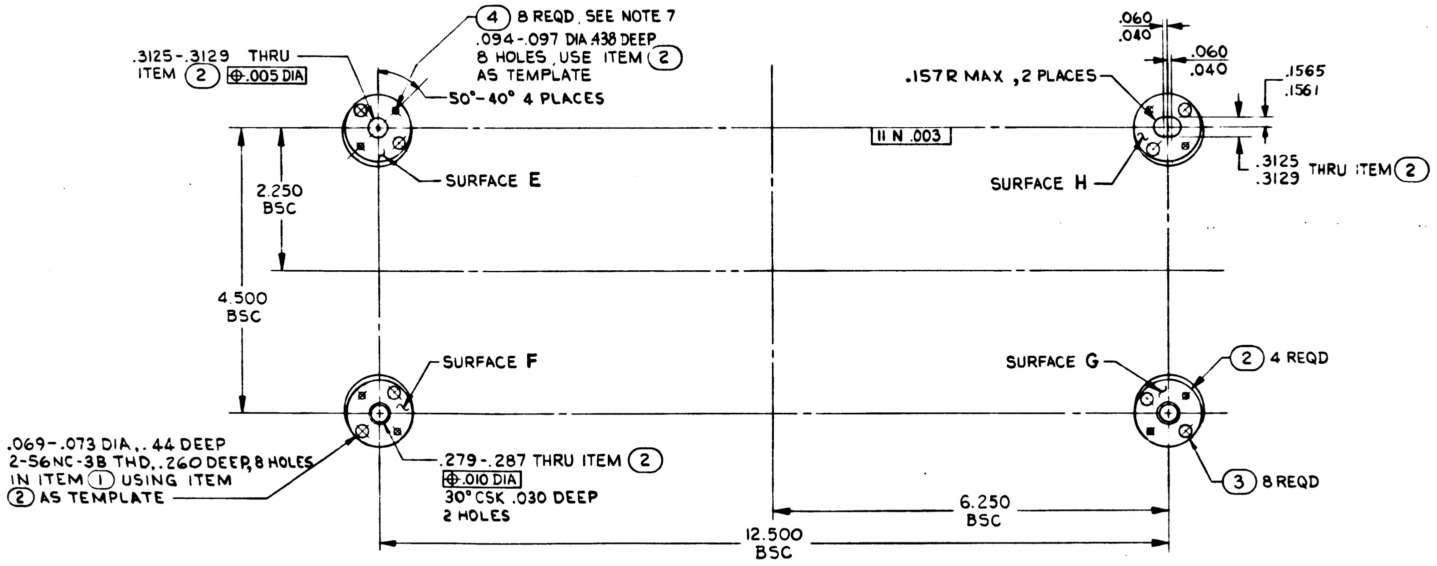

.069-.073 DIA, .66 DEEP
2-56NC-3B THD, .380 DEEP, 8 HOLES
IN ITEM ① USING ITEM
② AS TEMPLATE
8 REQD ③
4 REQD ②
SURFACE J
①
.279-.287 THRU ITEM ②
⊕ .010 DIA
30° CSK .030 DEEP
2 HOLES
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
C
C
SURFACE K
50°-40° 4 PLACES
11.854
REF
8.000
BSC
4.000
BSC
5.927
REF
-P-
SURFACE L
.1565
.1561
⊥ P .003
-N-
.3125
.3129 THRU ITEM ②
SURFACE M
.157 R MAX, 2 PLACES
.060
.040
.060
.040
.3125-.3129 THRU
ITEM ② ⊕ .005 DIA
6.844
REF
10.266
REF
5.875
BSC
11.750
BSC

VIEW A-A


SURFACE B
8 PLACES
⑥ 4 REQD
SEE NOTE 10

SECTION C-C


A (ZONE D-12)
IDENTIFICA
B (ZONE A-12)


.3125-.3129 THRU
ITEM ② ⊕ .005 DIA
④ 8 REQD, SEE NOTE 7
.094-.097 DIA .438 DEEP
8 HOLES, USE ITEM ②
AS TEMPLATE
50°-40° 4 PLACES
SURFACE E
.060
.040
.060
.040
.157 R MAX, 2 PLACES
.1565
.1561
∥ N .003
.3125
.3129 THRU ITEM ②
SURFACE H
2.250
BSC
4.500
BSC
SURFACE F
SURFACE G
② 4 REQD
.069-.073 DIA, .44 DEEP
2-56NC-3B THD, .260 DEEP, 8 HOLES
IN ITEM ① USING ITEM
② AS TEMPLATE
.279-.287 THRU ITEM ②
⊕ .010 DIA
30° CSK .030 DEEP
2 HOLES
③ 8 REQD
6.250
BSC
12.500
BSC

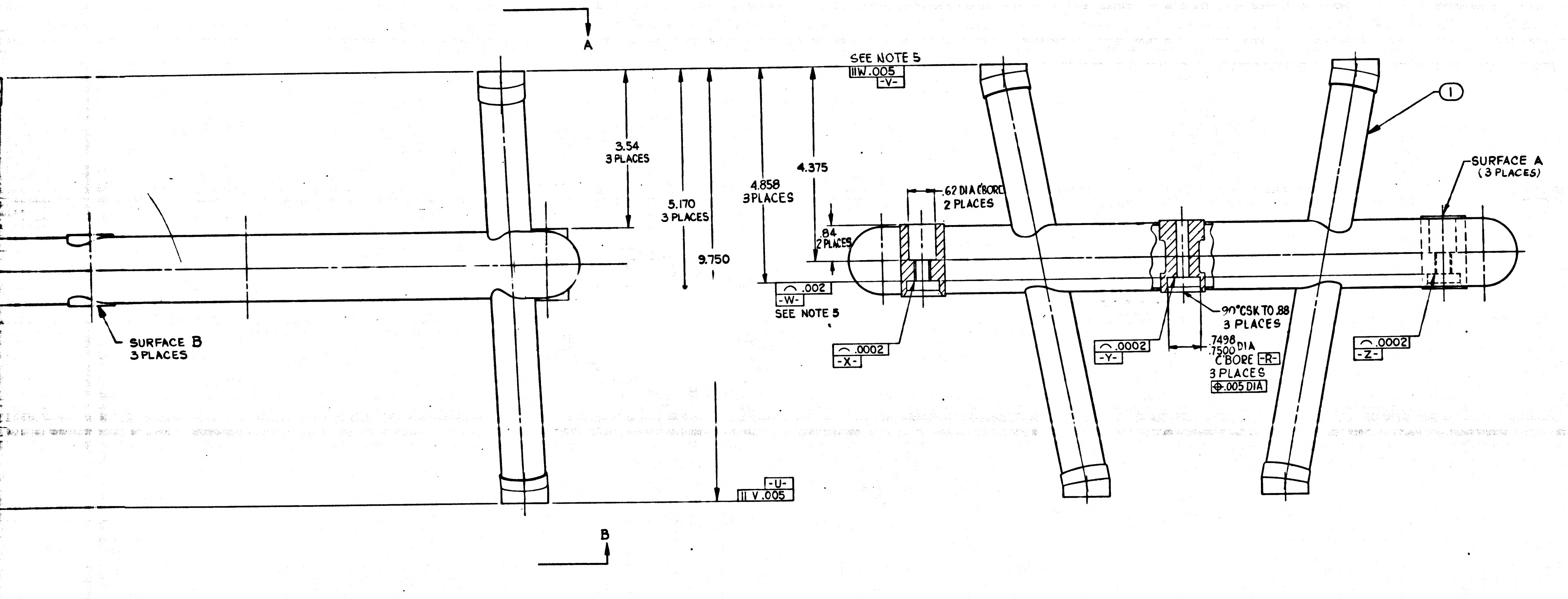
PARTIAL VIEW B-B

6899951	E	1

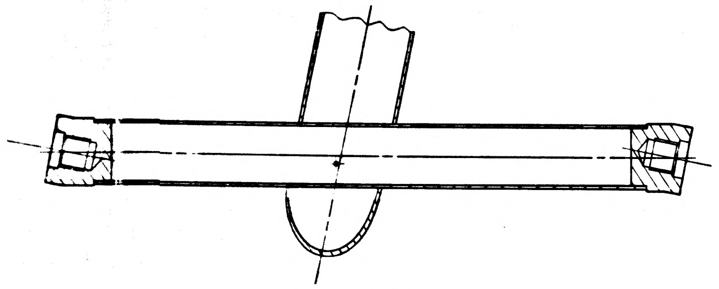
1 / 6899951

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER DO 58783		15 DEC 64	RL

5-35



A
B
SEE NOTE 5
W .005
-V-
3.54
3 PLACES
5.170
3 PLACES
9.750
4.858
3 PLACES
4.375
.62 DIA C'BORE
2 PLACES
.84
2 PLACES
.002
-W-
SEE NOTE 5
.0002
-X-
.0002
-Y-
90° CSK TO .88
3 PLACES
.7498
.7500 DIA
C'BORE -R-
3 PLACES
⊕ .005 DIA
.0002
-Z-
①
SURFACE A
(3 PLACES)
SURFACE B
3 PLACES
-U-
V .005



SECTION C-C

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 15435 DATE 1/17/65

3H

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 8	3	AR	1010730	CATALYST EPOXY BUTADIENE ENAMEL
SEE NOTE 8	2	AR	1010729-1	RESIN, EPOXY BUTADIENE ENAMEL
	1	1	6899953	BASE, NAVIGATION, LEM (WELDMENT)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899951-011	6899950-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02 ±.005
ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tomsen DATE 3 NOV 64
CHECKED C. Pisida 9 DEC 64
APPROVAL J. Hein 10 DEC 64
APPROVAL [illegible] 11 DEC 64
NASA APPROVAL 1-13-65
MIT APPROVAL 1/12/65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

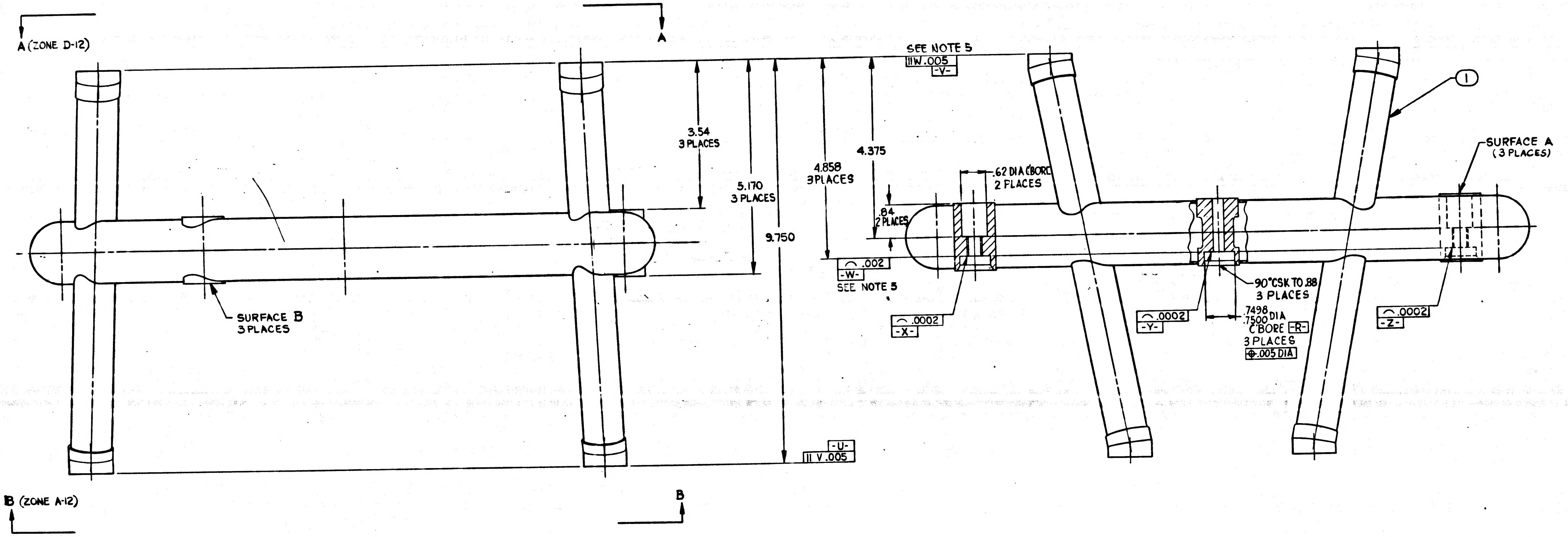
BASE, NAVIGATION-LEM
(INSEPARABLE ASSEMBLY,
MACHINING)

CODE IDENT NO.
SIZE J
6899952
SCALE FULL
SHEET 1 OF 1

F3

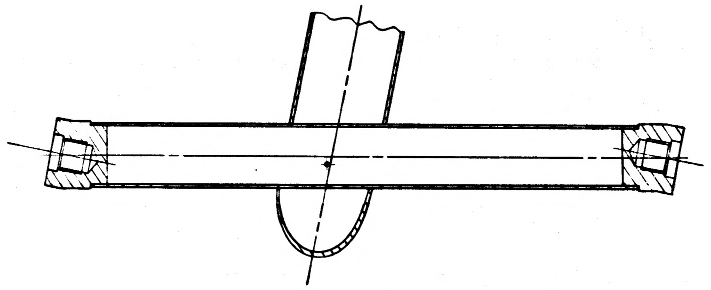
SYM	ZONE	DESCRIPTION	CH NO	DATE	APPD
REVISIONS 15435					
A		REVISED PER 00 58783		15 DEC 64	

RE .16 DEEP
THD .395 DEEP
.50
.44 DEEP
D .255 DEEP


A (ZONE D-12)
A
B (ZONE A-12)
B
3.54
3 PLACES
5.170
3 PLACES
9.750
4.858
3 PLACES
4.375
.84
2 PLACES
.62 DIA C'BORE
2 PLACES
SEE NOTE 5
‖ W .005
-V-
⌒ .002
-W-
SEE NOTE 5
⌒ .0002
-X-
⌒ .0002
-Y-
⌒ .0002
-Z-
90° CSK TO .88
3 PLACES
.7498
.7500 DIA
C'BORE -R-
3 PLACES
⊕ .005 DIA
SURFACE A
(3 PLACES)
SURFACE B
3 PLACES
-U-
‖ V .005
1

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 15435 DATE 1/11/65



SECTION C-C

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	
3	AR	1010730	CATALYST EPOXY BUTADIENE ENAMEL	SEE NOTE 8
2	AR	1010729-1	RESIN EPOXY BUTADIENE ENAMEL	SEE NOTE 8
	1	6899953	BASE NAVIGATION, LEM (WELDMENT)	

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899951-011	6899950-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02 ±.005
ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamm DATE 3 NOV 64
CHECKED Pirida 9 DEC 64
APPROVAL Hagen 10 DEC 64
APPROVAL DEC 64
NASA APPROVAL
MIT APPROVAL 1/12/65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE NAVIGATION—LEM
(INSEPARABLE ASSEMBLY,
MACHINING)

CODE IDENT NO.
SIZE J
6899952
SCALE FULL
SHEET 1 OF

6899952

E-2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.

3. MUST BE FREE FROM BURRS.

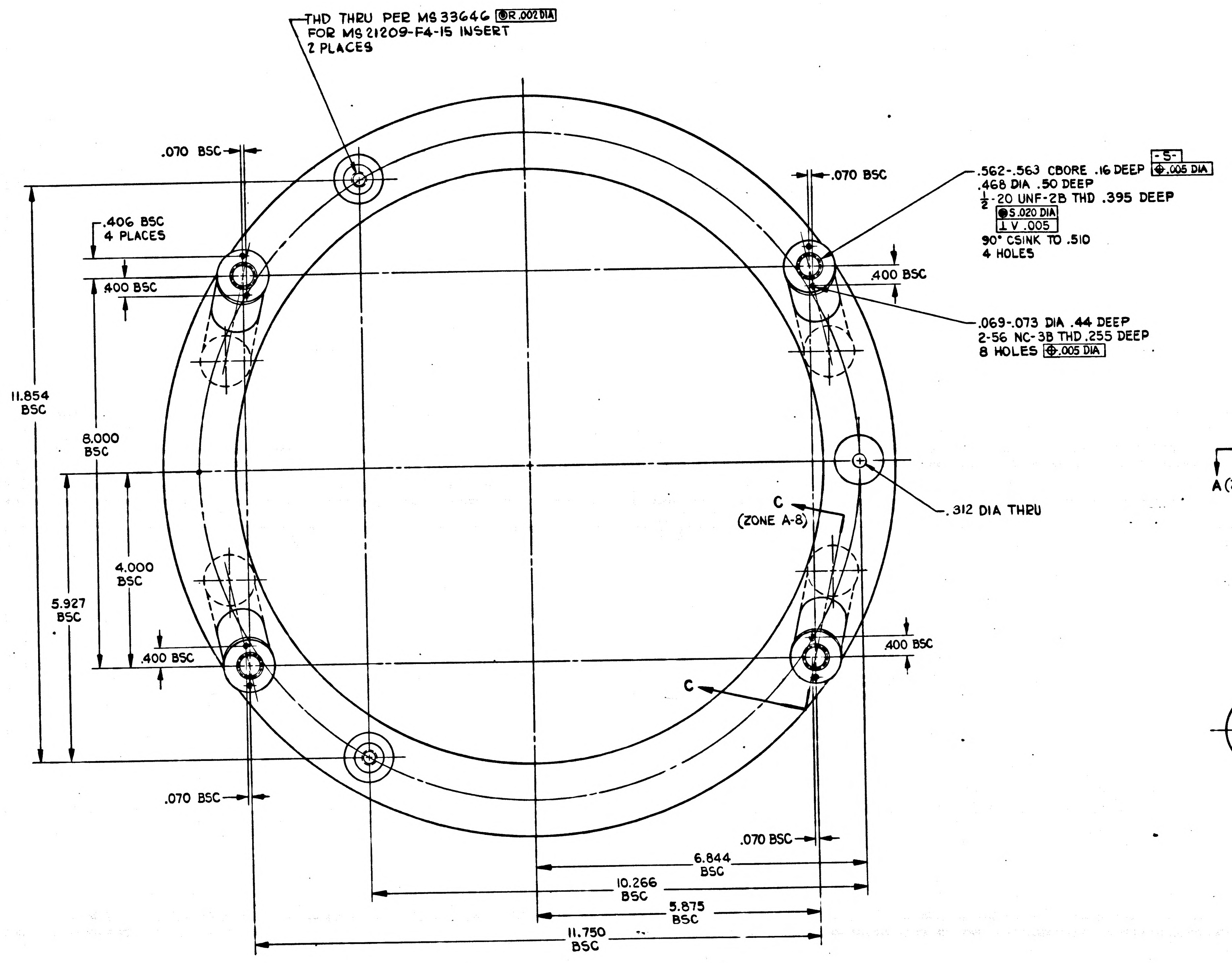
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.

5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- & -Z-.

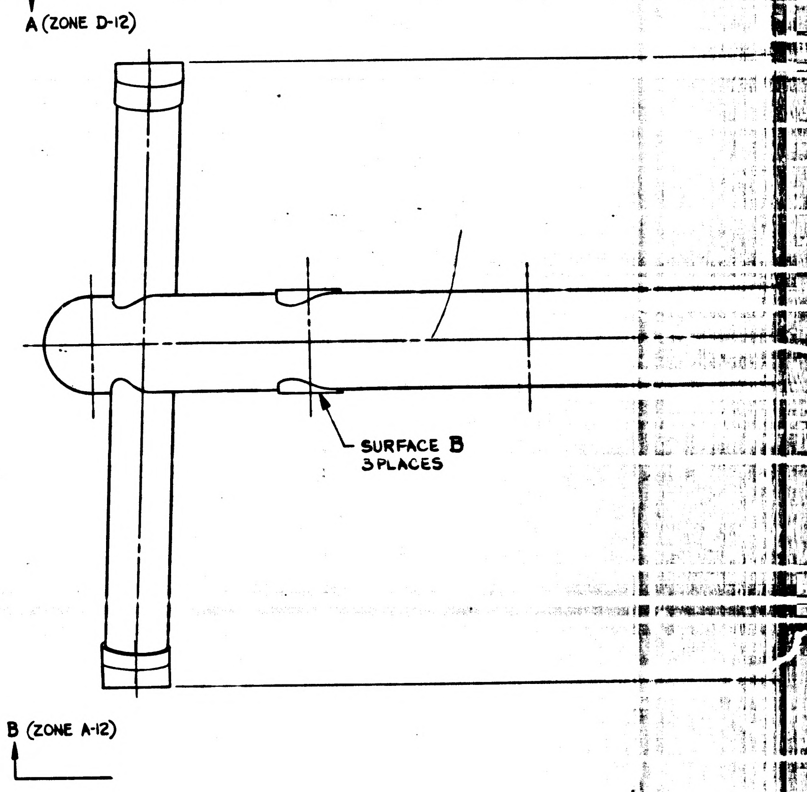
7. CHEMICAL FILM PER MIL-C-5541(ES-591) SURFACES A & B AND WALLS AND BOTTOM OF .62 DIA CBORE, 3 PLACES EACH.

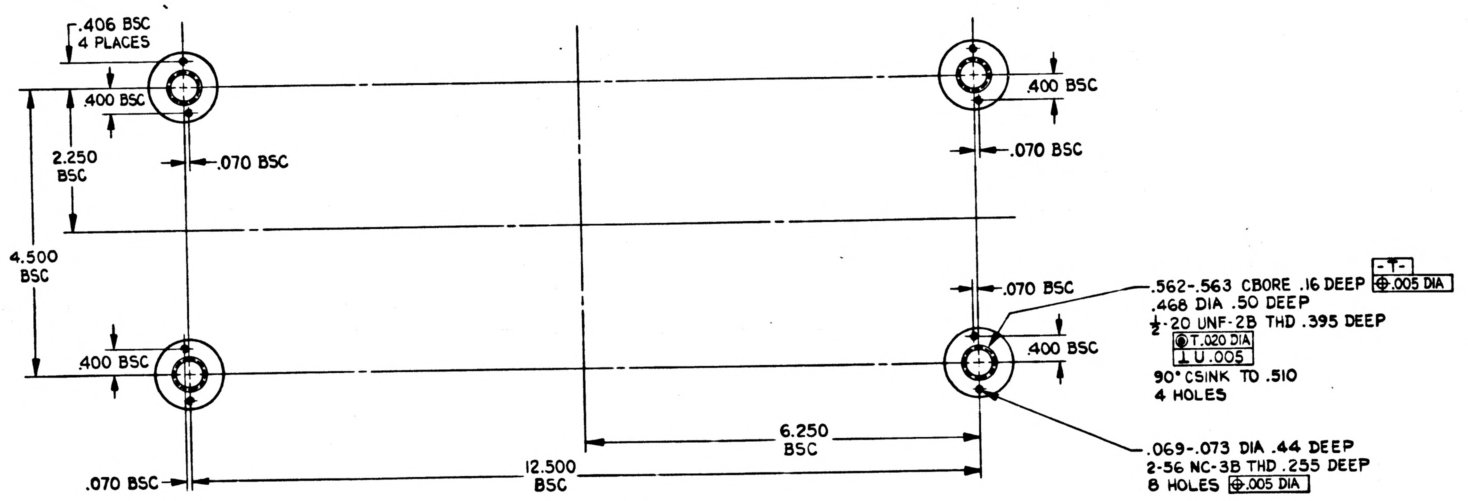
8. FINISH:
   APPLY LUSTERLESS EPOXY ENAMEL, ITEMS ② & ③, GREY, COLOR NO.36231 OF FED-STD-595. APPLY PER ND 1002110, THE FOLLOWING AREAS TO BE MASKED AND FREE OF PAINT:
   - A. ALL THREADED HOLES
   - B. ALL SURFACES OF DATUMS -U-, -V- & -W-
   - C. ALL CSKS AND CBORES LEADING TO DATUM -W-
   - D. SURFACES DEFINED IN NOTE 7

9. TAG USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

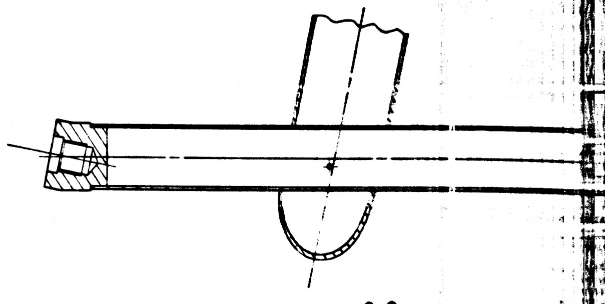

THD THRU PER MS 33646 Ⓡ R .002 DIA
FOR MS 21209-F4-15 INSERT
2 PLACES
.070 BSC
.406 BSC
4 PLACES
.400 BSC
11.854
BSC
8.000
BSC
4.000
BSC
5.927
BSC
.400 BSC
.070 BSC
.070 BSC
.562-.563 CBORE .16 DEEP -S- ⊕ .005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
● S .020 DIA
⊥ V .005
90° CSINK TO .510
4 HOLES
.400 BSC
.069-.073 DIA .44 DEEP
2-56 NC-3B THD .255 DEEP
8 HOLES ⊕ .005 DIA
.312 DIA THRU
C
(ZONE A-8)
C
.400 BSC
.070 BSC
6.844
BSC
10.266
BSC
5.875
BSC
11.750
BSC

VIEW A-A


A (ZONE D-12)
SURFACE B
3 PLACES
B (ZONE A-12)


.406 BSC
4 PLACES
.400 BSC
2.250
BSC
.070 BSC
4.500
BSC
.400 BSC
.400 BSC
.070 BSC
.070 BSC
.562-.563 CBORE .16 DEEP -T- ⊕ .005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
◉ T .020 DIA
⊥ U .005
90° CSINK TO .510
4 HOLES
.400 BSC
.069-.073 DIA .44 DEEP
2-56 NC-3B THD .255 DEEP
8 HOLES ⊕ .005 DIA
6.250
BSC
12.500
BSC
.070 BSC

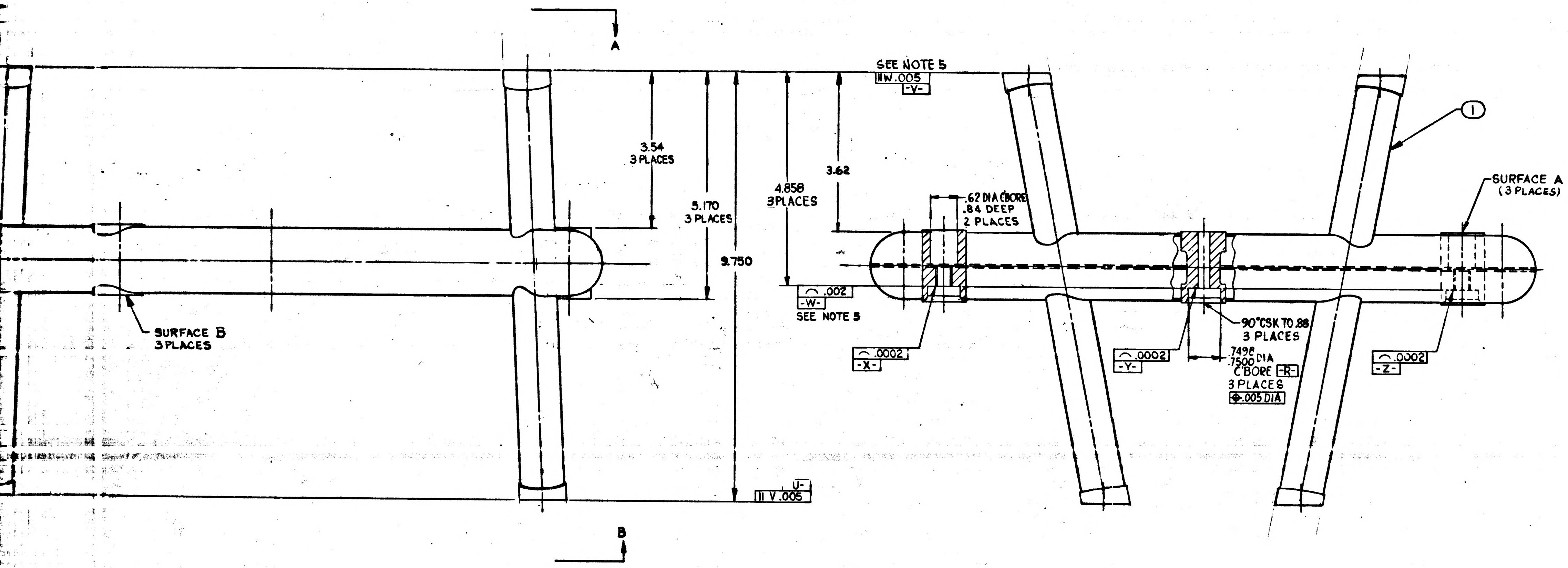
PARTIAL VIEW B-B



SECTION C-C

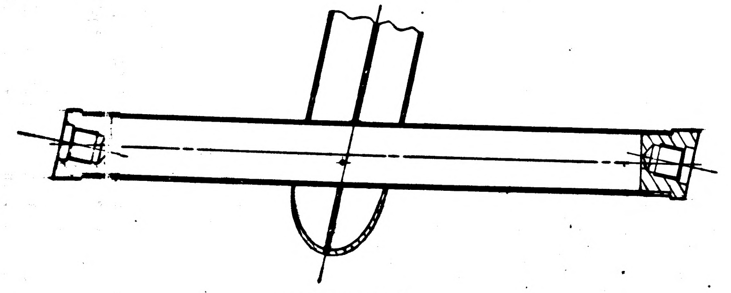
6899952

REVISIONS 15435					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER DO 58783		15 DEC 64	
B	–	REVISED PER MXC200370	—	25 MAR 65	
C		REVISED PER TDRR CLASS A RELEASE 17942			



A
SEE NOTE 5
W .005
-V-
①
3.54
3 PLACES
5.170
3 PLACES
4.858
3PLACES
3.62
9.750
.62 DIA C'BORE
.84 DEEP
2 PLACES
SURFACE A
(3 PLACES)
.002
-W-
SEE NOTE 5
SURFACE B
3 PLACES
.0002
-X-
.0002
-Y-
90°CSK TO .88
3 PLACES
.7498
.7500 DIA
C'BORE -R-
3 PLACES
.005 DIA
.0002
-Z-
-U-
V .005
B

15435 1/13/65



SECTION C-C

3H

SEE NOTE 8	3	AR	1010730	CATALYST, EPOXY BUTADIENE ENAMEL
SEE NOTE 8	2	AR	1010729-1	RESIN, EPOXY BUTADIENE ENAMEL
	1	1	6899953	BASE, NAVIGATION, LEM (WELDMENT)
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	LIST OF PARTS AND MATERIALS			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

NEXT ASSY	USED ON
6899951-011	6899950-011
APPLICATION	

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tammer DATE 3 NOV 64
CHECKED C. Pirjda 9 DEC 64
APPROVAL J. Hanna 10 DEC 64
APPROVAL 11 DEC 64
NASA APPROVAL 1-13-65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION-LEM
(INSEPARABLE ASSEMBLY,
MACHINING)

CODE IDENT NO.
SIZE J
6899952
SCALE FULL
SHEET 1 OF 1

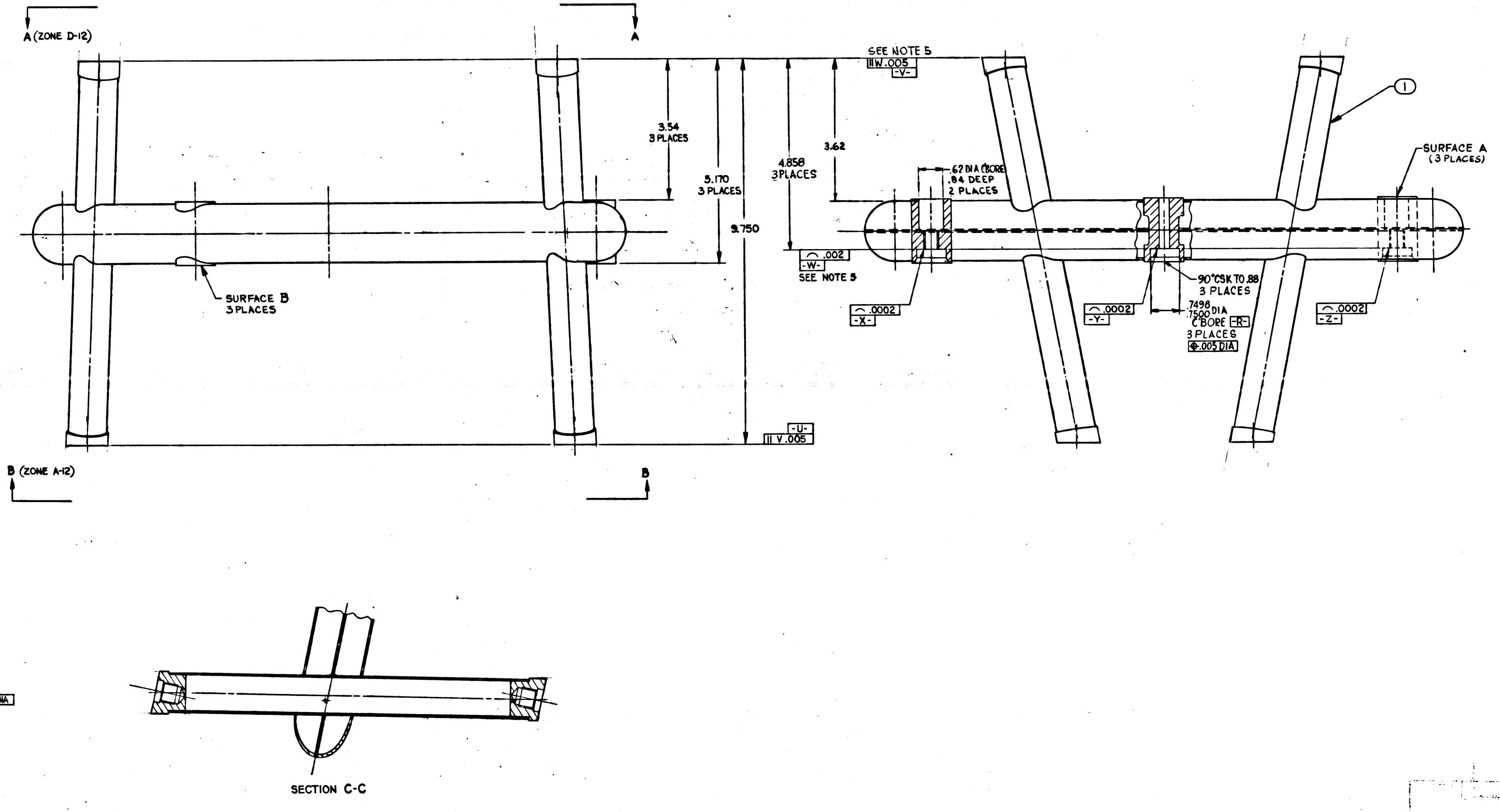
6899952 C

6899952 REV B SH

E3

SYM	ZONE	DESCRIPTION
A		REVISED PER DO
B	-	REVISED PER ADN
C		REVISED PER TDRR CLASS A RELEASE

.532-.563 CBORE .16 DEEP -S- ⌖.005 DIA
.4 .50 DEEP
.395 DEEP
3 .5
4



.34 DIA THRU
A (ZONE D-12)
A
B (ZONE A-12)
B
3.54
3 PLACES
5.170
3 PLACES
9.750
4.858
3 PLACES
3.62
SEE NOTE 5
W .005
-V-
⌒ .002
-W-
SEE NOTE 5
-U-
V .005
SURFACE B
3 PLACES
.62 DIA CBORE
.84 DEEP
2 PLACES
⌒ .0002
-X-
⌒ .0002
-Y-
90°CSK TO .88
3 PLACES
.7498
.7500 DIA
C'BORE -R-
3 PLACES
⌖.005 DIA
⌒ .0002
-Z-
SURFACE A
(3 PLACES)
1

SECTION C-C

.532-.563 CBORE .16 DEEP -T- ⌖.005 DIA
.50 DEEP
.28 THD .395 DEEP
.510
4

SEE NOTE 8	3	AR	0:0730	CATALYST
SEE NOTE 8	2	AR	0:0729-1	RESIN, EPON
			6899953	BASE, NAVIG
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE DESCRIPTION

LIST OF PARTS AND MA

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02 ±.005
ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tomasini DATE 3 NOV 64
CHECKED 9 DEC 64
APPROVAL 10 DEC 64
APPROVAL DEC 64
NASA APPROVAL 5-13-65
MIT APPROVAL

BASE
(INS

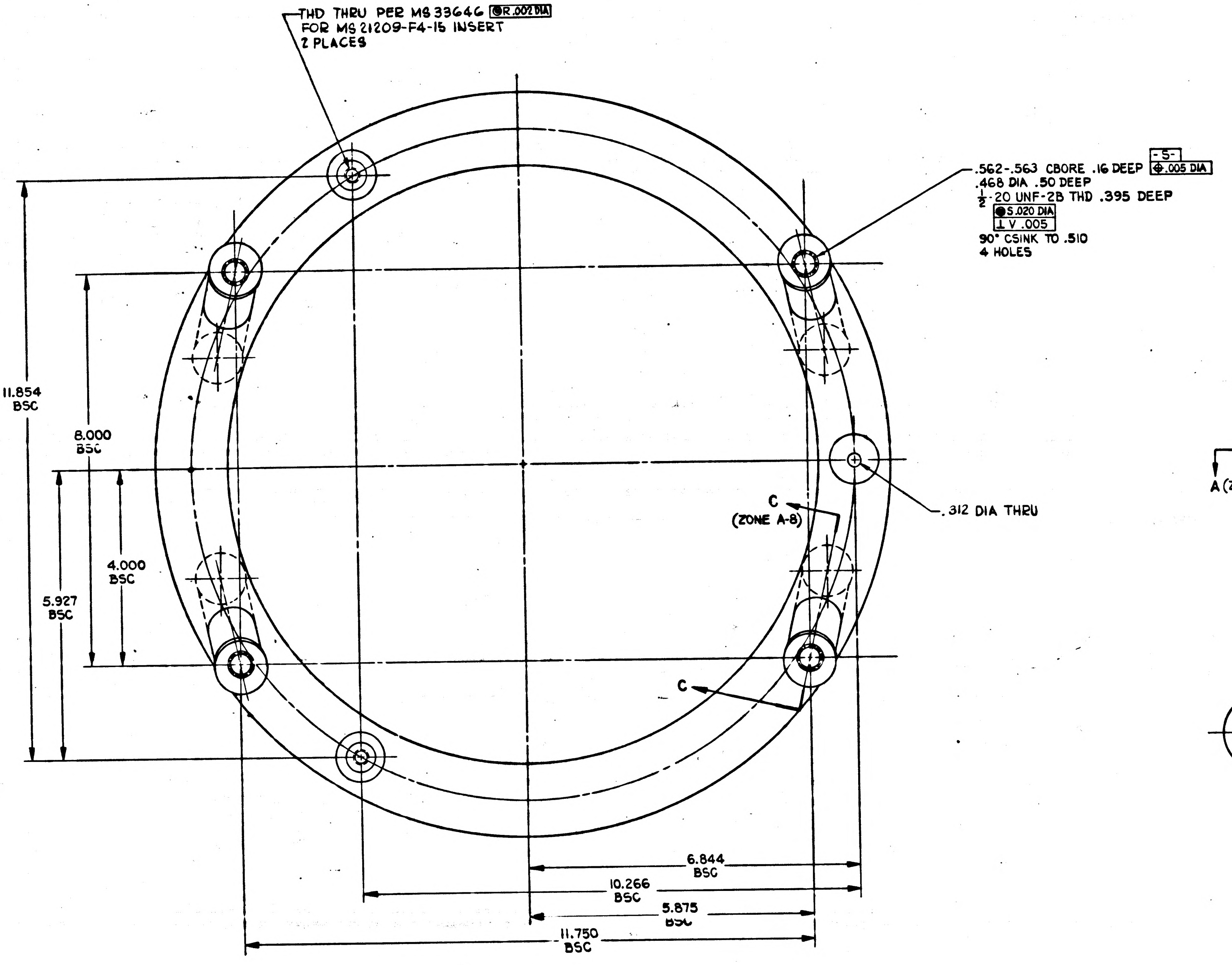
CODE IDENT NO.
SIZE J
SCALE

6899951-011	6899950-0
NEXT ASSY	USED ON
APPLICATION	

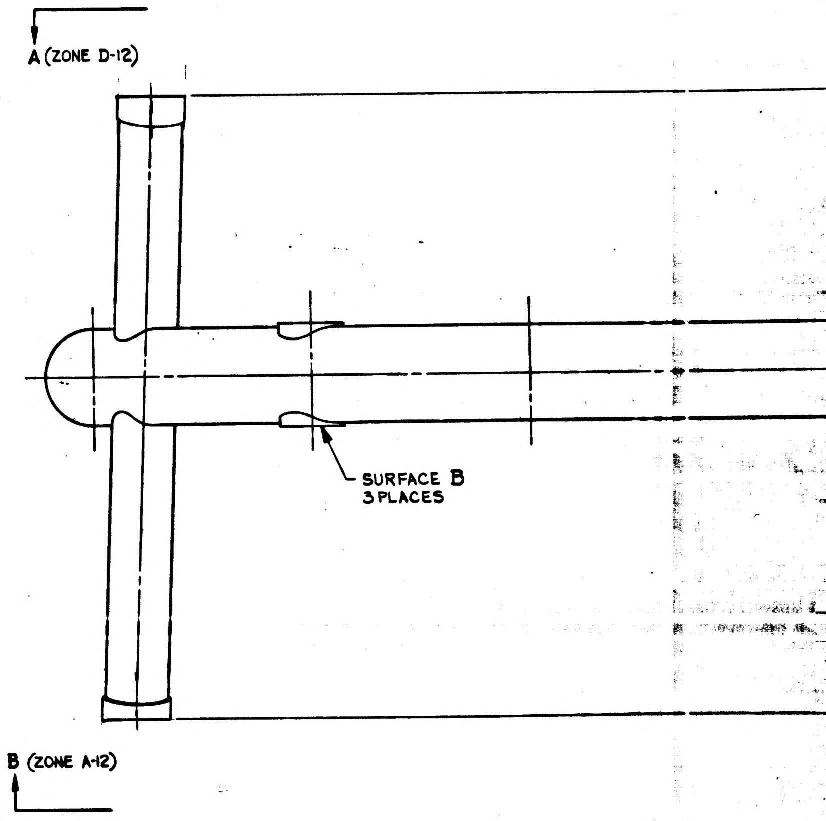
6899952 REV B SH

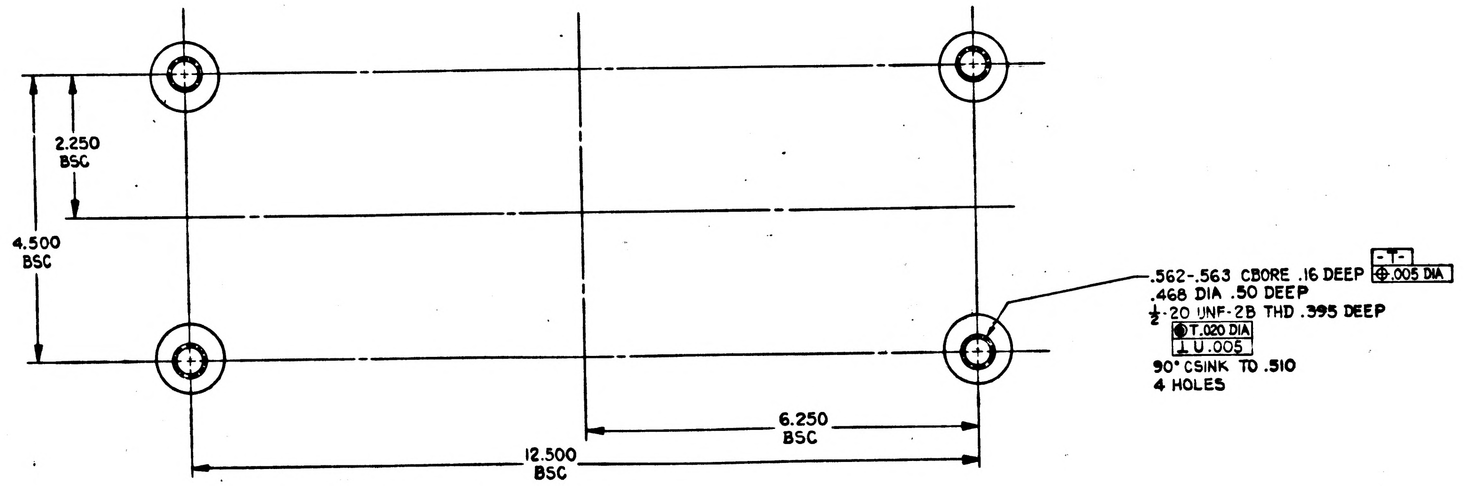
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   3. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.
3. MUST BE FREE FROM BURRS.
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.
5. WHEN MACHINING TO OBTAIN DATUM [-V-], DATUM PLANE [-W-] IS DEFINED BY THE HIGH POINTS OF SURFACES [-X-], [-Y-] & [-Z-].
7. CHEMICAL FILM PER MIL-C-5541(ES-591), SURFACES A & B AND WALLS AND BOTTOM OF .62 DIA CBORE, 3 PLACES EACH.
8. FINISH:
   APPLY LUSTERLESS EPOXY ENAMEL, ITEMS ② & ③, GREY, COLOR NO.36231 OF FED-STD-595. APPLY PER ND 1002110, THE FOLLOWING AREAS TO BE MASKED AND FREE OF PAINT:
   A. ALL THREADED HOLES
   B. ALL SURFACES OF DATUMS [-U-], [-V-] & [-W-]
   C. ALL CSKS AND CBORES LEADING TO DATUM [-W-]
   D. SURFACES DEFINED IN NOTE 7
9. TAG USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

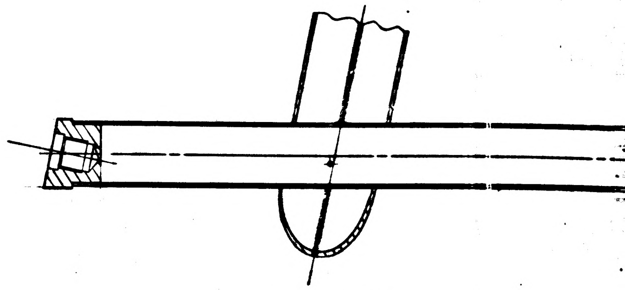

THD THRU PER MS 33646 [ⓢR.002 DIA]
FOR MS 21209-F4-15 INSERT
2 PLACES
.562-.563 CBORE .16 DEEP [-S-] [⊕.005 DIA]
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
[●S.020 DIA]
[⊥ V .005]
90° CSINK TO .510
4 HOLES
.312 DIA THRU
C
(ZONE A-8)
C
11.854 BSC
8.000 BSC
4.000 BSC
5.927 BSC
6.844 BSC
10.266 BSC
5.875 BSC
11.750 BSC

VIEW A-A


A (ZONE D-12)
SURFACE B
3 PLACES
B (ZONE A-12)


2.250 BSC
4.500 BSC
6.250 BSC
12.500 BSC
.562-.563 CBORE .16 DEEP [-T-] [⊕.005 DIA]
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
[●T.020 DIA]
[⊥ U .005]
90° CSINK TO .510
4 HOLES

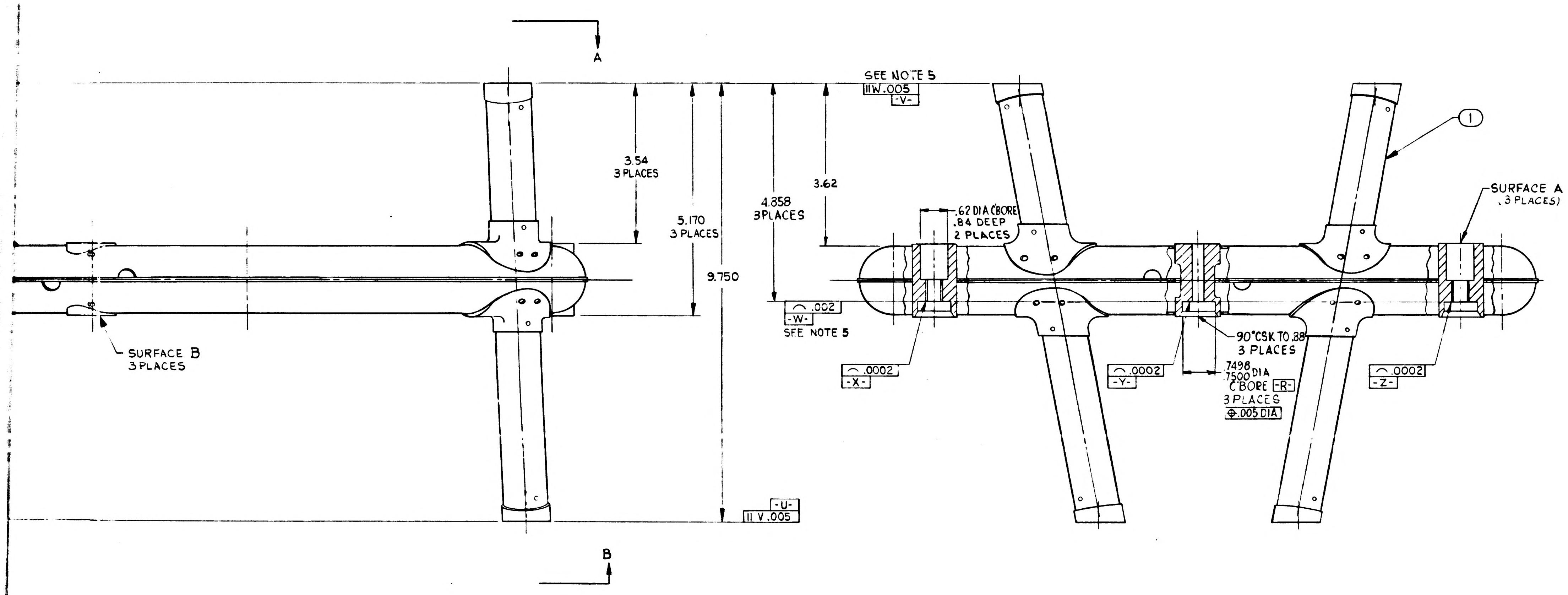
PARTIAL VIEW B-B



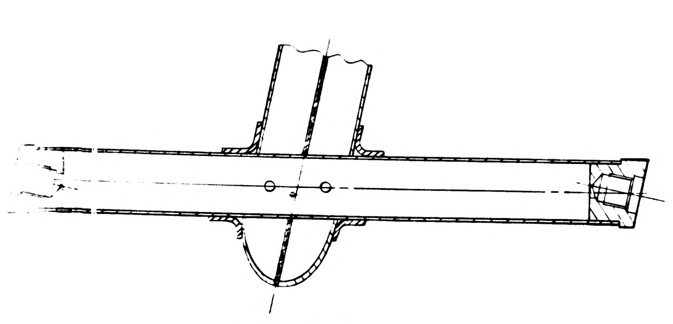
SECTION C-C

6899952 REV B SH

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER DO 58783		15 DEC 64	RL
B	—	REVISED PER MXC200370	—	25 MAR 65	
C		REVISED PER TDRR CLASS A RELEASE 7942			
D		REVISED PER TDRR 9941		23	



A
SEE NOTE 5
IIW .005
-V-
3.54
3 PLACES
5.170
3 PLACES
4.858
3PLACES
3.62
9.750
.62 DIA CBORE
.84 DEEP
2 PLACES
1
SURFACE A
(3 PLACES)
⌒ .002
-W-
SEE NOTE 5
SURFACE B
3 PLACES
⌒ .0002
-X-
⌒ .0002
-Y-
90°CSK TO .88
3 PLACES
.7498
.7500 DIA
CBORE -R-
3 PLACES
⊕ .005 DIA
⌒ .0002
-Z-
-U-
II V .005
B



SECTION C-C

SEE NOTE 8	3	AR	1010730	CATALYST EPOXY BUTADIENE ENAMEL
SEE NOTE 8	2	AR	1010729-1	RESIN, EPOXY BUTADIENE ENAMEL
	1	1	6899963	BASE, NAVIGATION, LEM (BRAZED)
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

6899951-011	6899950-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
± —	±.02 ±.005	± 2°

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Tamen DATE 3 NOV 64
CHECKED C. Pioda 9 DEC 64
APPROVAL 10 DEC 64
APPROVAL DEC 64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE NAVIGATION-LEM
(INSEPARABLE ASSEMBLY,
MACHINING)

CODE IDENT NO
SIZE J
6899952
SCALE FULL
SHEET 1 OF 1

6899952 D

2/6899952

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.

3. MUST BE FREE FROM BURRS.

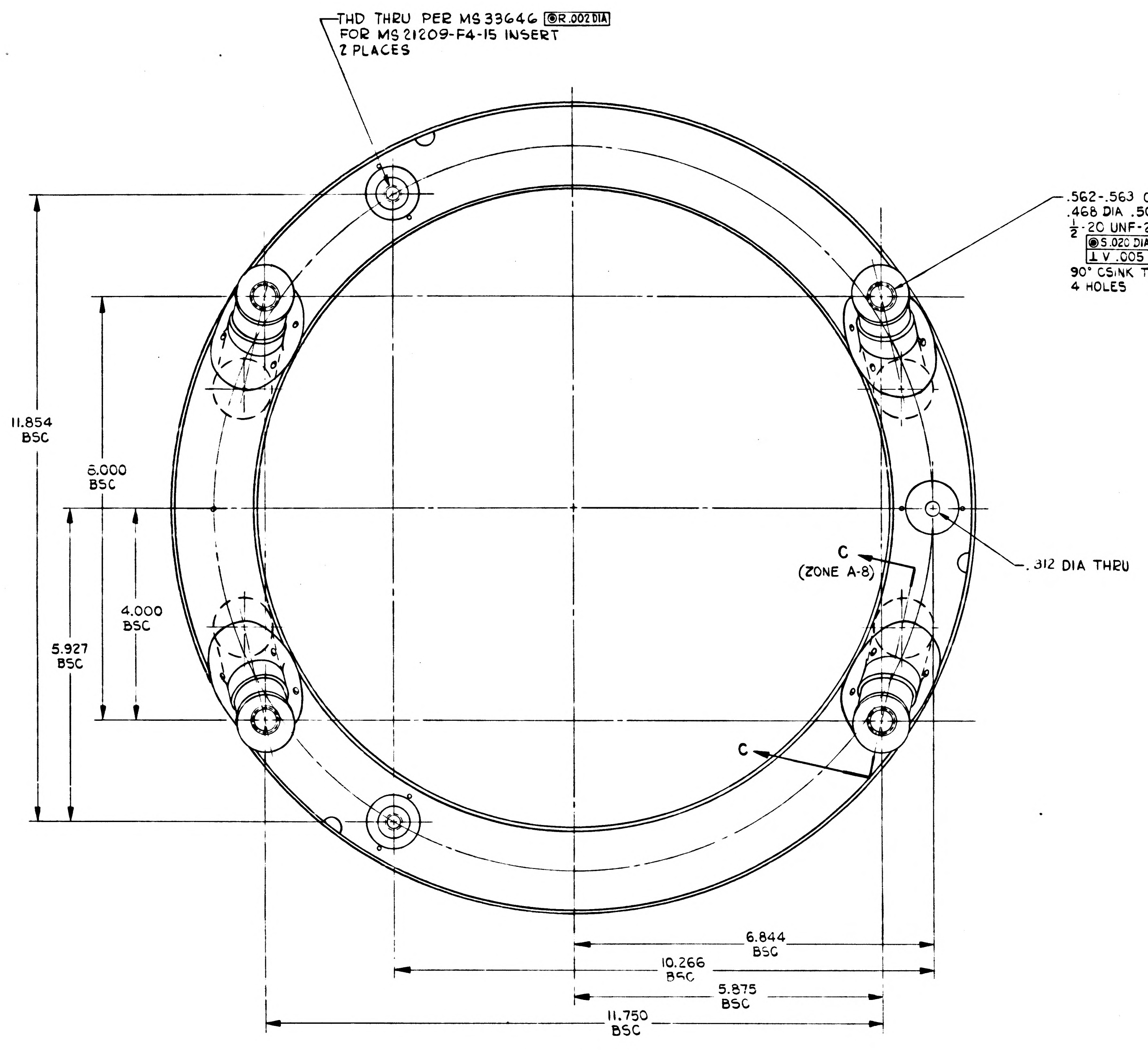
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.

5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- & -Z-.

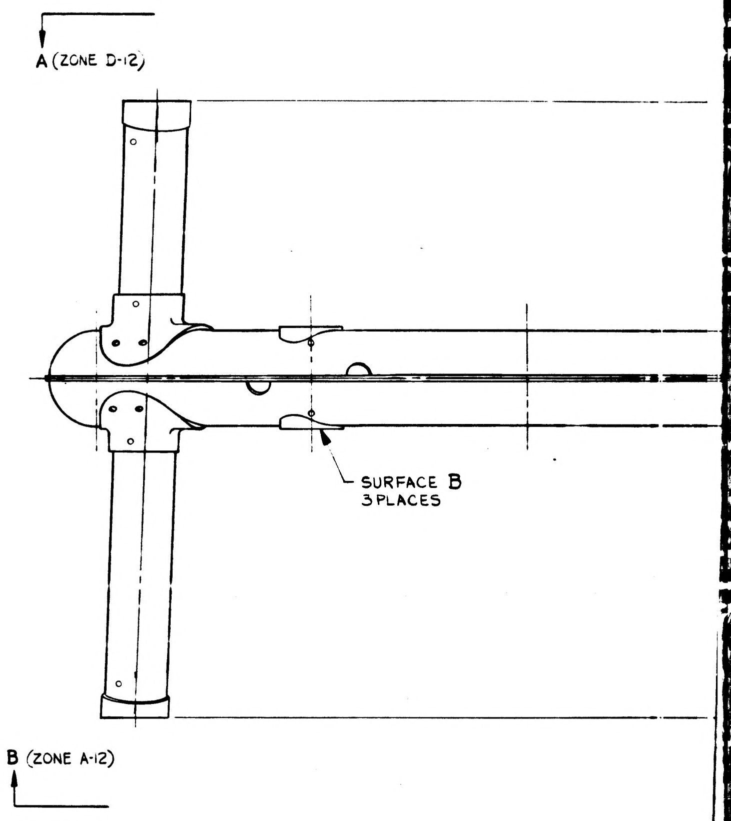
7. CHEMICAL FILM PER MIL-C-5541(ES-591), SURFACES A & B AND WALLS AND BOTTOM OF .62 DIA CBORE, 3 PLACES EACH.

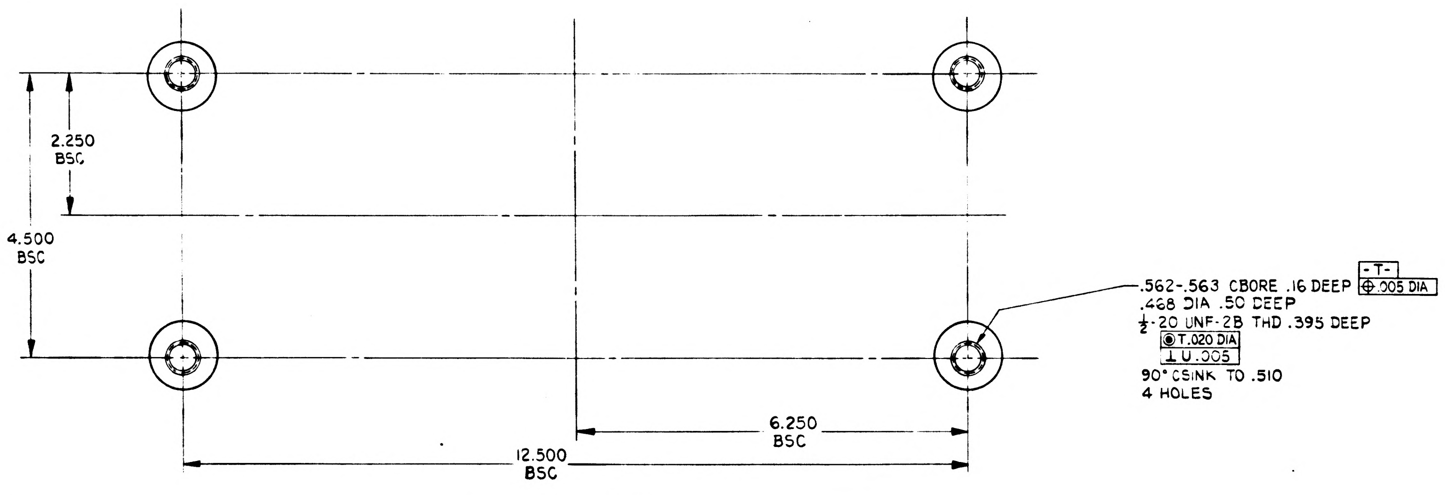
8. FINISH:
   APPLY LUSTERLESS EPOXY ENAMEL, ITEMS ② & ③, GREY, COLOR NO.36231 OF FED-STD-595. APPLY PER ND 1002110, THE FOLLOWING AREAS TO BE MASKED AND FREE OF PAINT:
   A. ALL THREADED HOLES
   B. ALL SURFACES OF DATUMS -U-, -V- & -W-
   C. ALL CSKS AND CBORES LEADING TO DATUM -W-
   D. SURFACES DEFINED IN NOTE 7

9. TAG USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

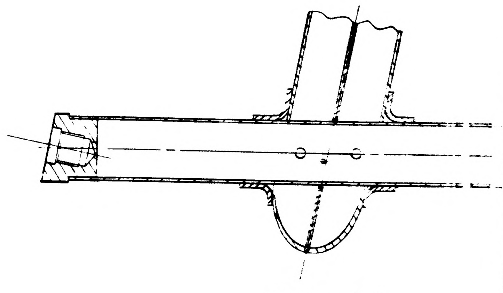

THD THRU PER MS 33646 ◎R.002 DIA
FOR MS 21209-F4-15 INSERT
2 PLACES
.562-.563 CBORE .16 DEEP -S- ⊕.005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
◎S.020 DIA
⊥V.005
90° CSINK TO .510
4 HOLES
.312 DIA THRU
C
(ZONE A-8)
C
11.854
BSC
6.000
BSC
4.000
BSC
5.927
BSC
6.844
BSC
10.266
BSC
5.875
BSC
11.750
BSC

VIEW A-A


A (ZONE D-12)
SURFACE B
3 PLACES
B (ZONE A-12)

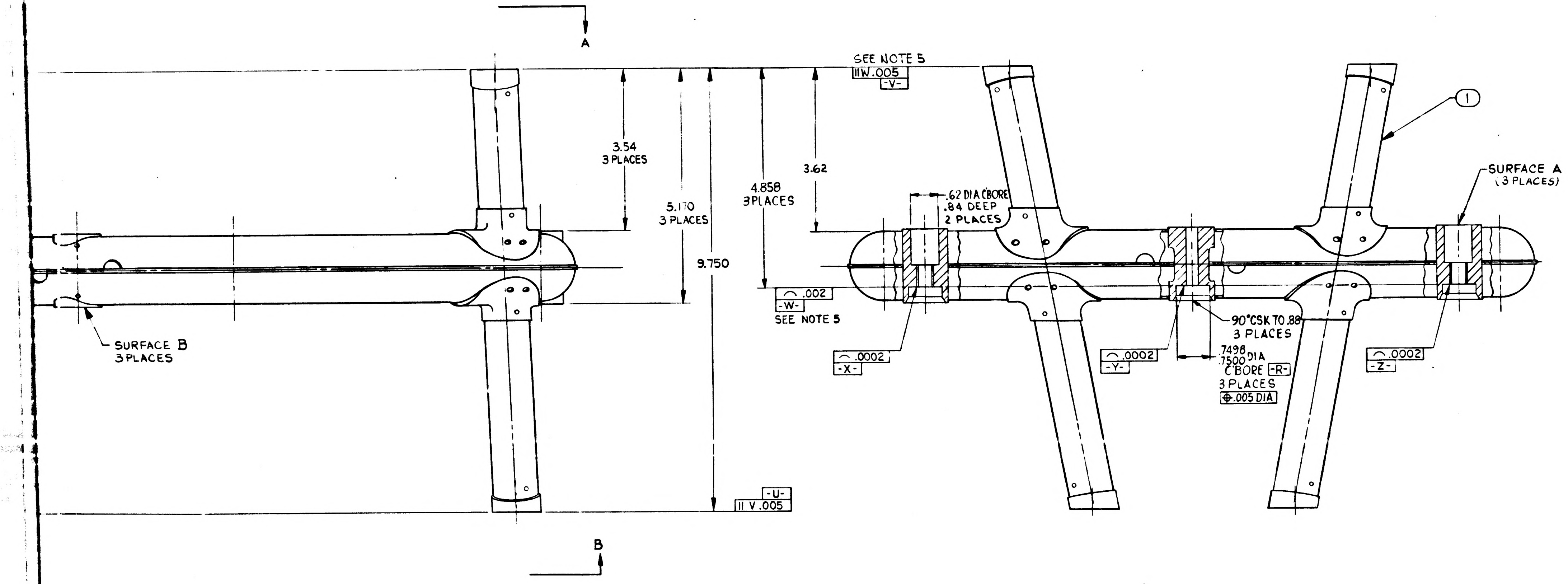

2.250
BSC
4.500
BSC
.562-.563 CBORE .16 DEEP -T- ⊕.005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
◎T.020 DIA
⊥U.005
90° CSINK TO .510
4 HOLES
6.250
BSC
12.500
BSC

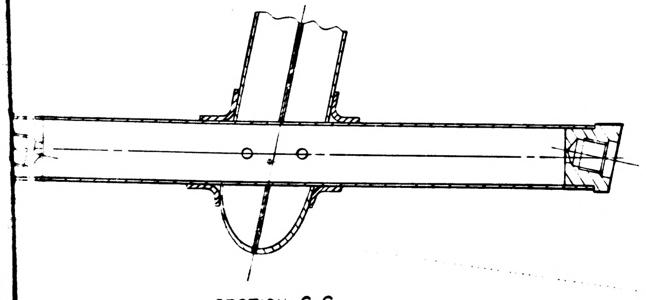
PARTIAL VIEW B-B



SECTION C-C

6899952 D


A
SEE NOTE 5
W .005
-V-
3.54
3 PLACES
5.170
3 PLACES
9.750
4.858
3 PLACES
3.62
.62 DIA C'BORE
.84 DEEP
2 PLACES
SURFACE A
(3 PLACES)
1
.002
-W-
SEE NOTE 5
SURFACE B
3 PLACES
.0002
-X-
.0002
-Y-
90° CSK TO .88
3 PLACES
.7498
.7500 DIA
C'BORE -R-
3 PLACES
.005 DIA
.0002
-Z-
-U-
V .005
B



SECTION C-C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER DO 58783		15 DEC 64	
B	–	REVISED PER MXC200370	—	25 MAR 65	
C		REVISED PER TDRR 7942 CLASS A RELEASE			
D		REVISED PER TDRR 19941		23	
E		REVISED PER TDRR 20584		2 65	

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
~~SEE NOTE 8~~	~~3~~	~~AR~~	~~1010730~~	~~CATALYST, EPOXY BUTADIENE ENAMEL~~
~~SEE NOTE 8~~	~~2~~	~~AR~~	~~1010729-1~~	~~RESIN, EPOXY BUTADIENE ENAMEL~~
	1	1	6899963	BASE, NAVIGATION, LEM, BRAZED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899951-011	6899950-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02 ±.005
ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

M.I.T.
INSTRUMENTATION LAB
DRAWN R. Tamon DATE 3 NOV 64
CHECKED C. Piojda 9 DEC 64
APPROVAL 10 DEC 64
APPROVAL DEC 64
NASA APPROVAL
M.I.T. APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION—LEM
(INSEPARABLE ASSEMBLY,
MACHINING)

CODE IDENT NO. 80230
SIZE J
6899952
SCALE FULL
SHEET 1 OF 1

6899952 E

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.

3. MUST BE FREE FROM BURRS.

4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.

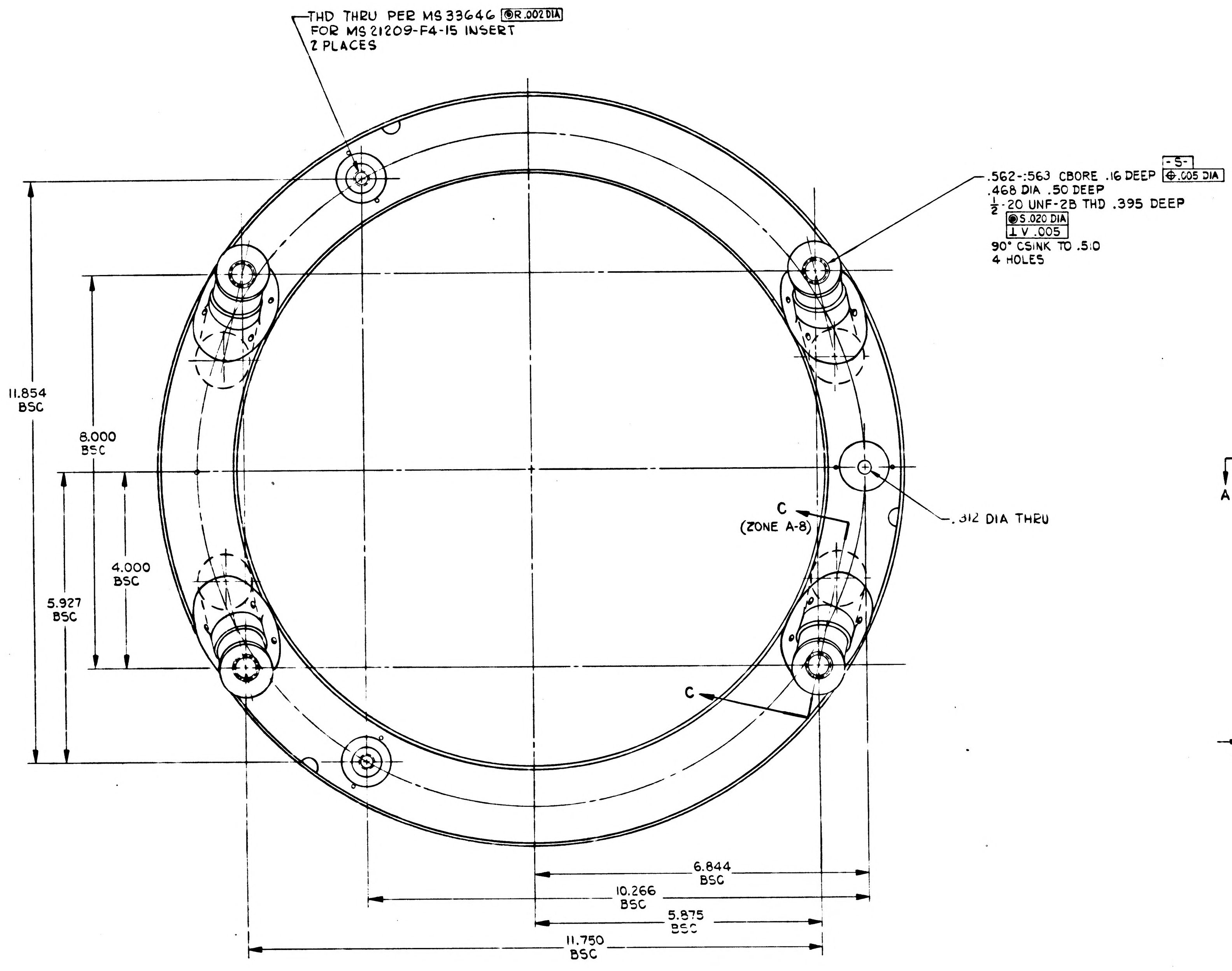
5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- & -Z-.

~~7. CHEMICAL FILM PER MIL-C-5541 (ES-591), SURFACES A & B AND WALLS AND BOTTOM OF .62 DIA CBORE, 3 PLACES EACH.~~

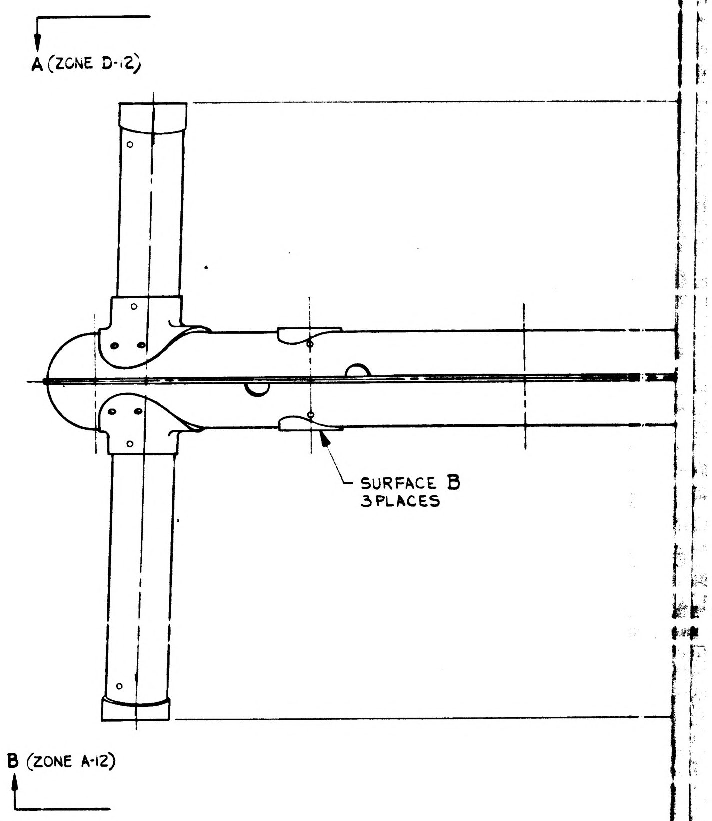
~~8. FINISH:~~
~~APPLY LUSTERLESS EPOXY ENAMEL ITEMS ② & ③ GREY, COLOR NO. 36231 OF FED-STD-595. APPLY PER ND 1002110.~~
~~THE FOLLOWING AREAS TO BE MASKED AND FREE OF PAINT:~~
   - ~~A. ALL THREADED HOLES.~~
   - ~~B. ALL SURFACES OF DATUMS -U-, -V- & -W-~~
   - ~~C. ALL CSKS AND CBORES LEADING TO DATUM -W-~~
   - ~~D. SURFACES DEFINED IN NOTE 7.~~

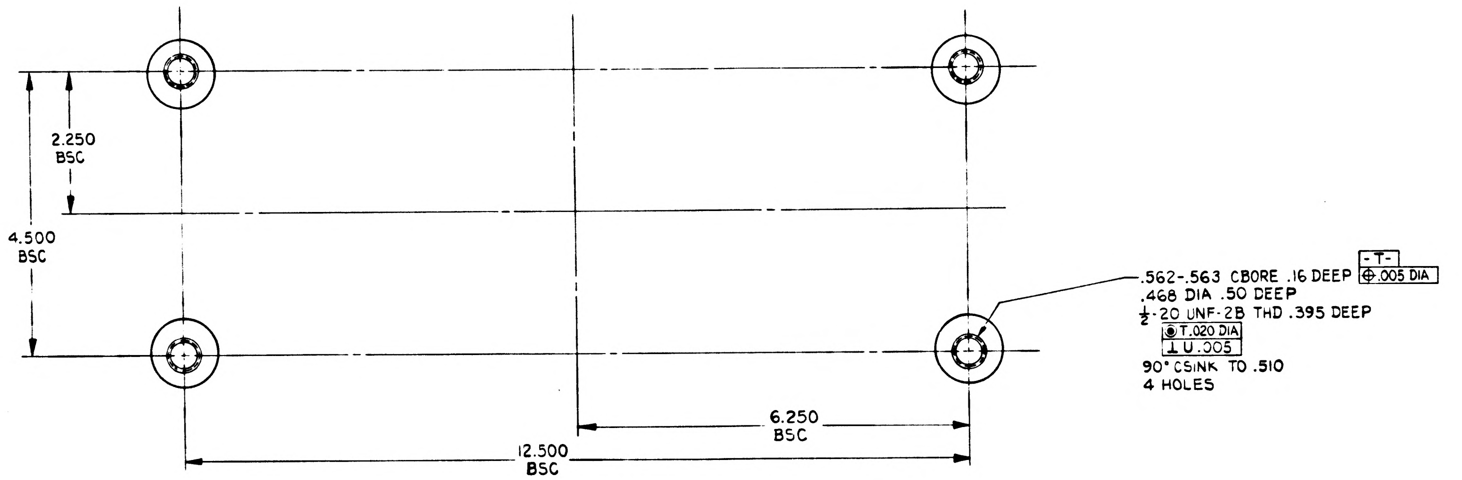
9. TAG USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

10. ANODIZE PER MIL-A-8625A-TYPE II, MASK COUNTER BORES X,Y,Z,S,T AND ALL THREADED HOLES.

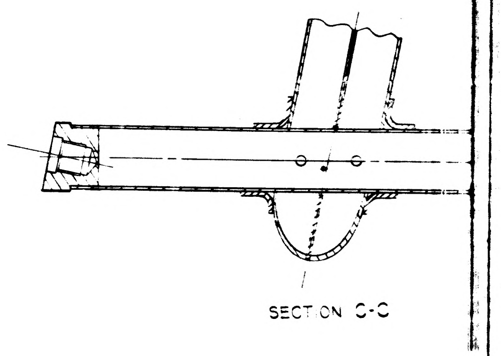

THD THRU PER MS 33646 ⊕R.002 DIA
FOR MS 21209-F4-15 INSERT
2 PLACES
.562-.563 CBORE .16 DEEP -S- ⊕.005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
◉S.020 DIA
⊥V .005
90° CSINK TO .510
4 HOLES
11.854 BSC
8.000 BSC
5.927 BSC
4.000 BSC
.312 DIA THRU
C (ZONE A-8)
C
6.844 BSC
10.266 BSC
5.875 BSC
11.750 BSC

VIEW A-A


A (ZONE D-12)
SURFACE B
3 PLACES
B (ZONE A-12)


2.250 BSC
4.500 BSC
.562-.563 CBORE .16 DEEP -T- ⊕.005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
◉T.020 DIA
⊥U.005
90° CSINK TO .510
4 HOLES
6.250 BSC
12.500 BSC

PARTIAL VIEW B-B

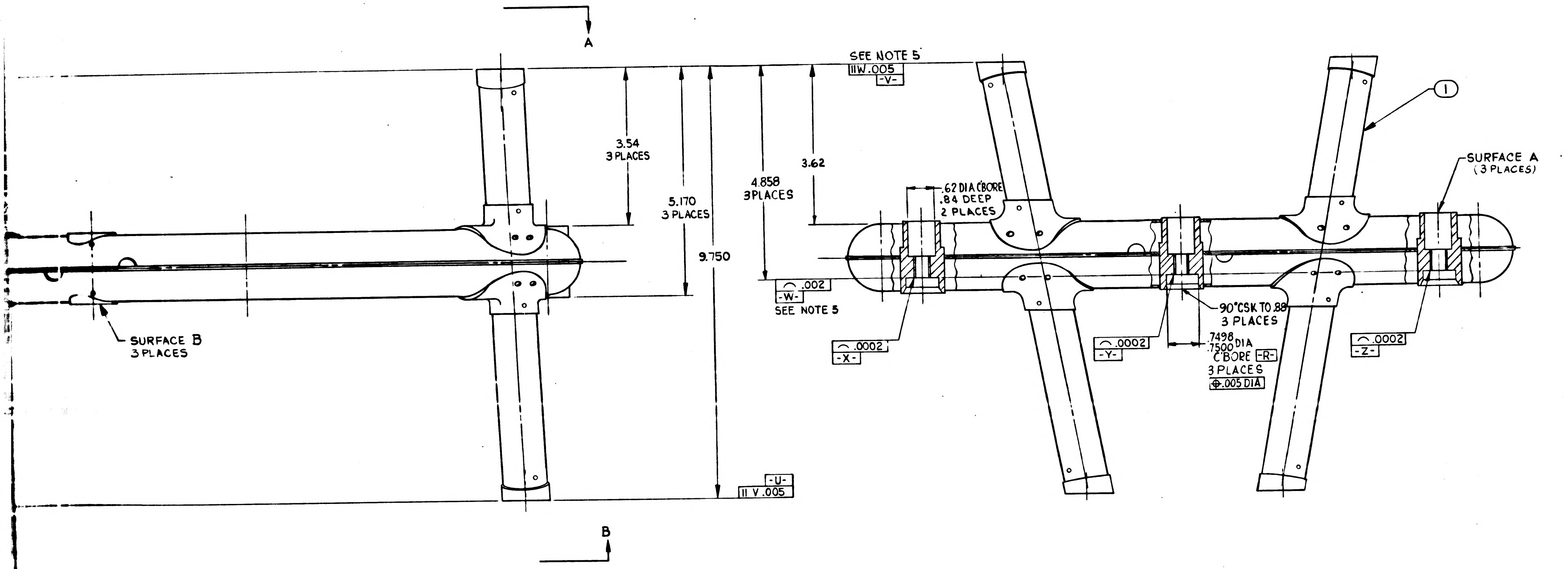


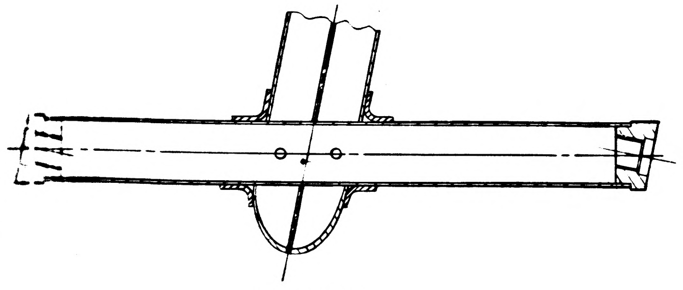
SECTION C-C

6899952 E

1/6899952

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER DO 58783		15 DEC 64	RL
B	–	REVISED PER MXC200370	—	25 MAR 65	
C		REVISED PER TDRR CLASS A RELEASE 17942			
Ⓜ D		REVISED PER TDRR 19941		23 65	
Ⓜ E		REVISED PER TDRR 20584		2 JUL 65	MCE
F		REVISED PER TDRR 21427		18 AUG 65	


A
SEE NOTE 5
W .005
-V-
3.54
3 PLACES
5.170
3 PLACES
4.858
3 PLACES
3.62
9.750
.62 DIA C'BORE
.84 DEEP
2 PLACES
①
SURFACE A
(3 PLACES)
.002
-W-
SEE NOTE 5
SURFACE B
3 PLACES
.0002
-X-
.0002
-Y-
90° CSK TO .88
3 PLACES
.7498
.7500 DIA
C'BORE -R-
3 PLACES
⊕ .005 DIA
.0002
-Z-
-U-
V .005
B



SECTION C-C

~~SEE NOTE 8~~	~~3~~	~~AR~~	~~1010730~~	~~CATALYST EPOXY BUTADIENE ENAMEL~~
~~SEE NOTE 8~~	~~2~~	~~AR~~	~~1010729-1~~	~~RESIN, EPOXY BUTADIENE ENAMEL~~
	1	1	6899963	BASE, NAVIGATION, LEM (BRAZED
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	±.02	+ 2°
−	±.005	−

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

6899951-011	6899950-011
NEXT ASSY	USED ON

APPLICATION

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN R. Tamon DATE 3 NOV 64
CHECKED C. Piojda 9 DEC 64
APPROVAL Hain 10 DEC 64
APPROVAL DEC 64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION–LEM
(INSEPARABLE ASSEMBLY,
MACHINING)

CODE IDENT NO. 80230
SIZE J_2
6899952
SCALE FULL
SHEET 1 OF 1

6899952 F

6899952 F

2/6899952

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.

3. MUST BE FREE FROM BURRS.

4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.

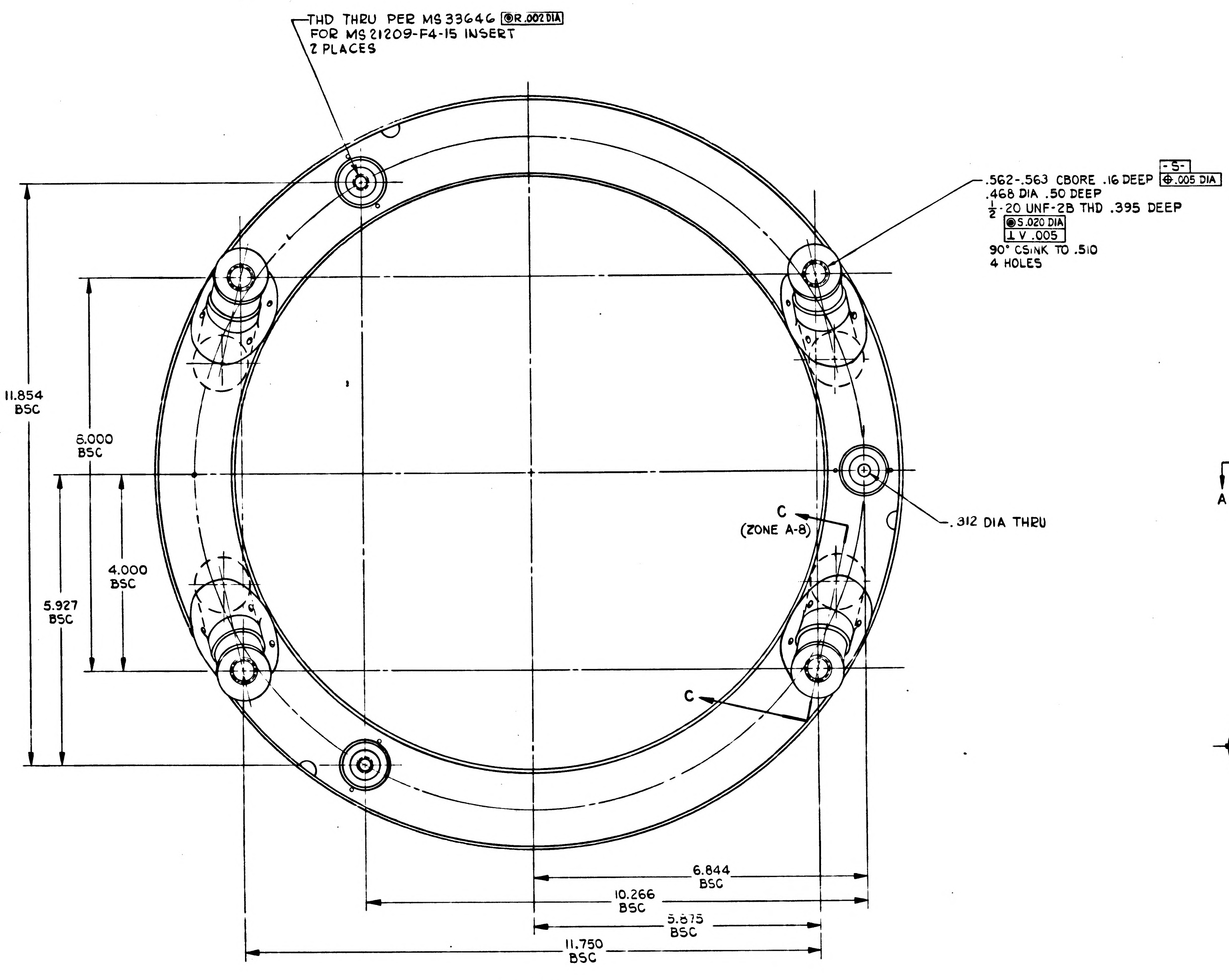
5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- & -Z-.

~~7. CHEMICAL FILM PER MIL-C-5541 (ES-591), SURFACES A & B AND WALLS AND BOTTOM OF .62 DIA CBORE, 3 PLACES EACH.~~

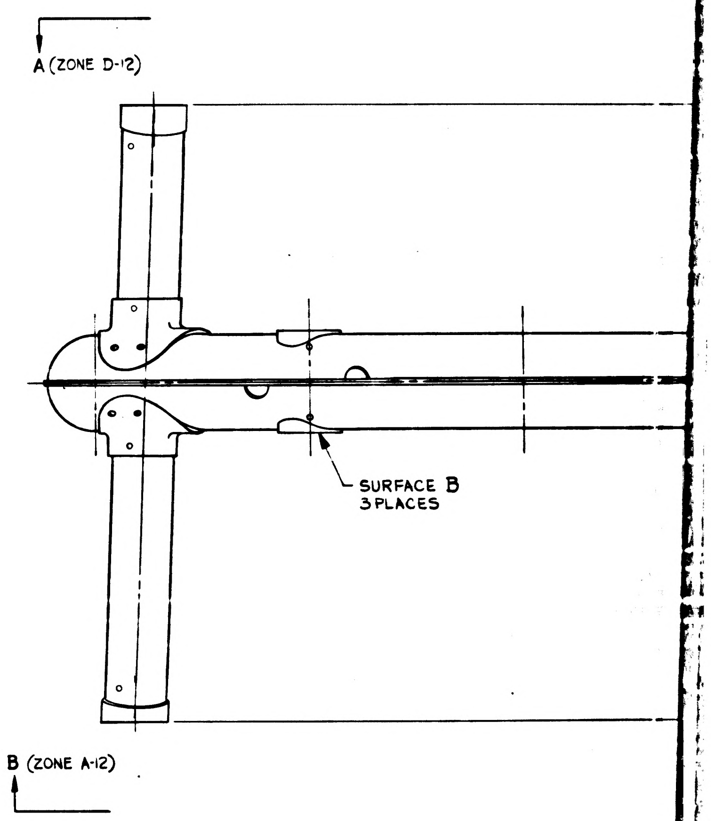
~~8. FINISH:~~
~~APPLY LUSTERLESS EPOXY ENAMEL, ITEMS ② & ③, GREY, COLOR NO. 36231 OF FED-STD-595. APPLY PER ND 1002110. THE FOLLOWING AREAS TO BE MASKED AND FREE OF PAINT:~~
   ~~A. ALL THREADED HOLES~~
   ~~B. ALL SURFACES OF DATUMS -U-, -V- & -W-~~
   ~~C. ALL CSKS AND CBORES LEADING TO DATUM -W-~~
   ~~D. SURFACES DEFINED IN NOTE 7.~~

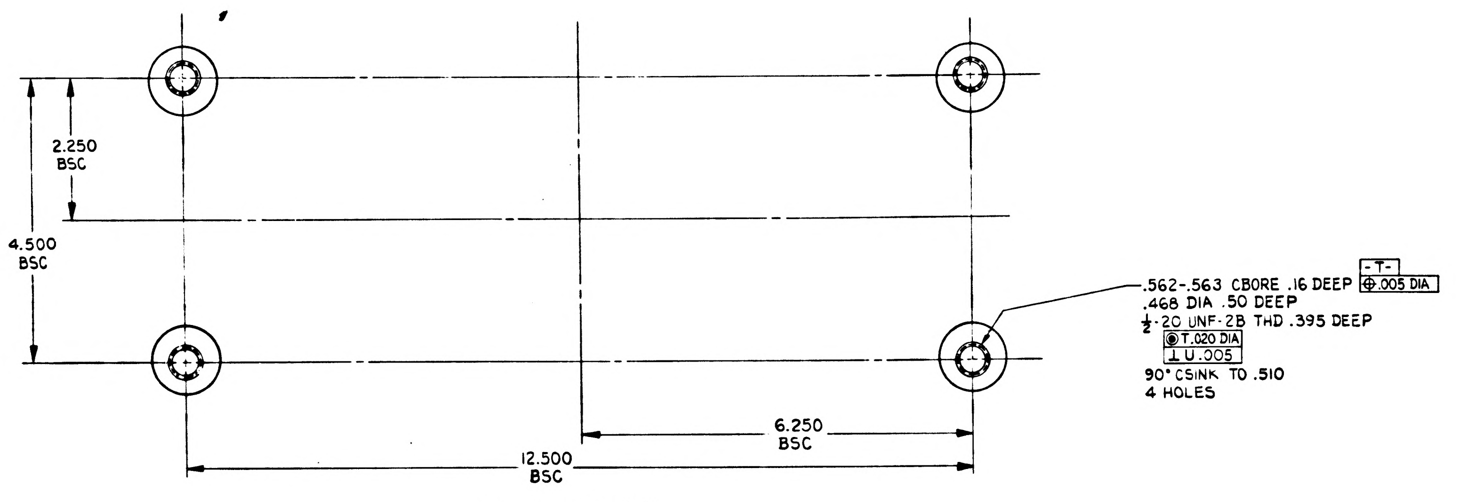
9. TAG USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

10. ANODIZE PER MIL-A-8625A-TYPE II, MASK COUNTER BORES X,Y,Z,S,T AND ALL THREADED HOLES.

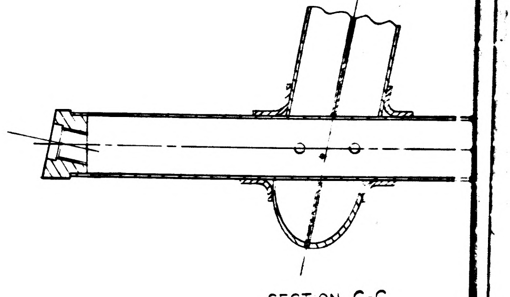

THD THRU PER MS 33646 ◎R.002 DIA
FOR MS 21209-F4-15 INSERT
2 PLACES
.562-.563 CBORE .16 DEEP -S- ⊕.005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
◎S.020 DIA
⊥ V .005
90° CSINK TO .510
4 HOLES
11.854 BSC
8.000 BSC
4.000 BSC
5.927 BSC
C (ZONE A-8)
C
.312 DIA THRU
6.844 BSC
10.266 BSC
5.875 BSC
11.750 BSC

VIEW A-A


A (ZONE D-12)
SURFACE B
3 PLACES
B (ZONE A-12)


2.250 BSC
4.500 BSC
.562-.563 CBORE .16 DEEP -T- ⊕.005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
◎T.020 DIA
⊥ U .005
90° CSINK TO .510
4 HOLES
6.250 BSC
12.500 BSC

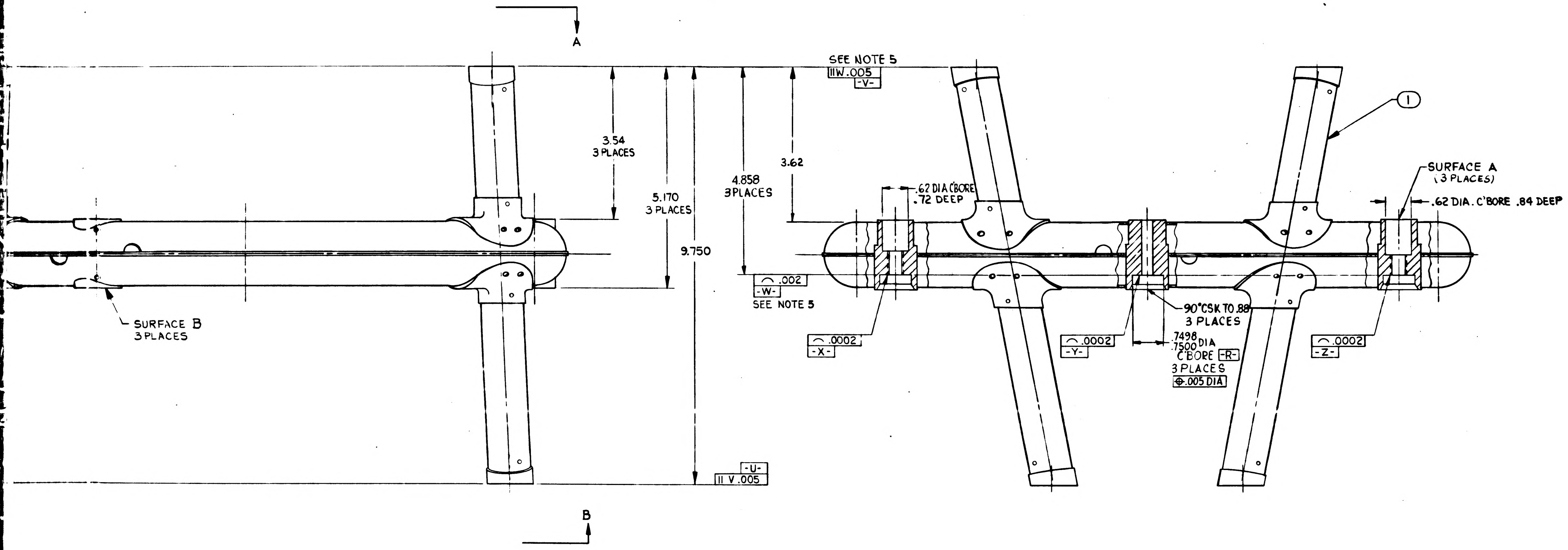
PARTIAL VIEW B-B

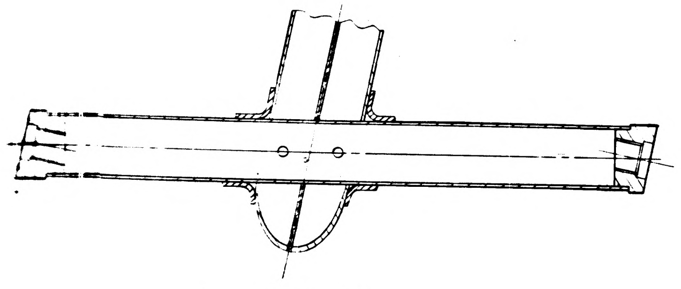


SECTION C-C

6899952	REV F	S-

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER DO 58783		15 DEC 64	RL
B	–	REVISED PER MXC200370	—	25 MAR 65	
C		REVISED PER TDRR CLASS A RELEASE 17942			
D		REVISED PER TDRR 19941		23	
E		REVISED PER TDRR 20584		12 JUL 65	
F		REVISED PER TDRR 21427		13 AUG 65	
G		REVISED PER TDRR 26547		2 MAR 66	


A
B
SEE NOTE 5
IIW .005
-V-
3.54
3 PLACES
5.170
3 PLACES
9.750
4.858
3 PLACES
3.62
.62 DIA C'BORE
.72 DEEP
SURFACE A
(3 PLACES)
.62 DIA. C'BORE .84 DEEP
①
⌒ .002
-W-
SEE NOTE 5
⌒ .0002
-X-
⌒ .0002
-Y-
⌒ .0002
-Z-
90°CSK TO .88
3 PLACES
.7498
.7500 DIA
C'BORE -R-
3 PLACES
⊕ .005 DIA
SURFACE B
3 PLACES
-U-
II V .005



SECTION C-C

~~SEE NOTE 8~~	~~3~~	~~AR~~	~~1010730~~	~~CATALYST, EPOXY BUTADIENE ENAMEL~~
~~SEE NOTE 8~~	~~2~~	~~AR~~	~~1010729-1~~	~~RESIN, EPOXY BUTADIENE ENAMEL~~
	1	1	6899963	BASE, NAVIGATION, LEM (BRAZED)
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

6899951-011	6899950-011
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02 ±.005
ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN R. Tamen DATE 3 NOV 64
CHECKED C. Pioda 9 DEC 64
APPROVAL 10 DEC 64
APPROVAL DEC 64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

BASE NAVIGATION-LEM
(INSEPARABLE ASSEMBLY,
MACHINING)

CODE IDENT NO. 80230
SIZE J2
6899952
SCALE FULL
SHEET 1 OF 1

6899952 G

6899952 G

2/6899952

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.

3. MUST BE FREE FROM BURRS.

4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.

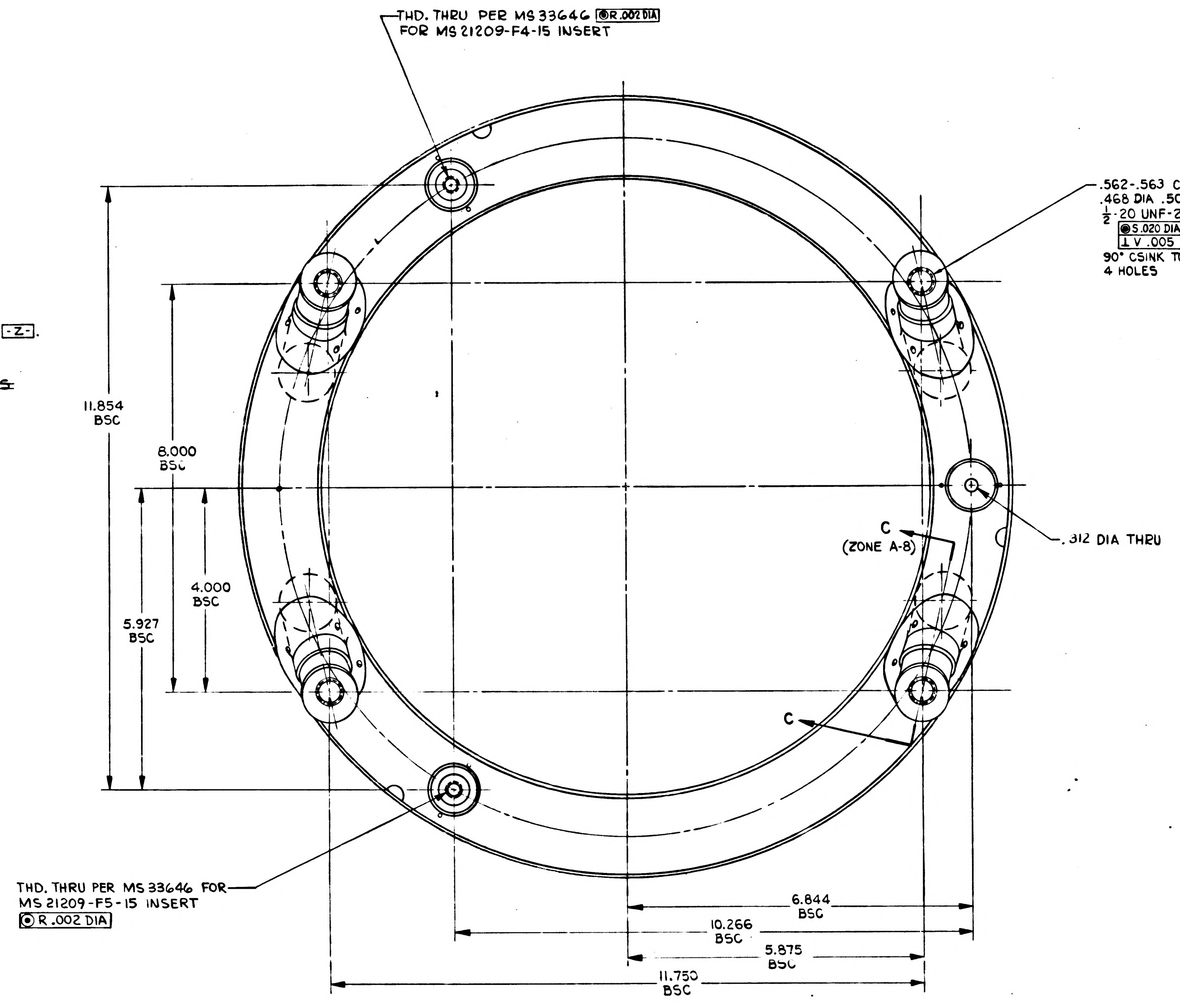
5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- & -Z-.

~~7. CHEMICAL FILM PER MIL-C-5541(ES-591), SURFACES A & B AND WALLS AND BOTTOM OF .62 DIA CBORE, 3 PLACES EACH.~~

~~8. FINISH:~~
~~APPLY LUSTERLESS EPOXY ENAMEL ITEMS ② & ③ GREY COLOR NO. 36231 OF FED-STD-595. APPLY PER ND 1002110. THE FOLLOWING AREAS TO BE MASKED AND FREE OF PAINT:~~
   ~~A. ALL THREADED HOLES~~
   ~~B. ALL SURFACES OF DATUMS -U-, -V- & -W-~~
   ~~C. ALL CSKS AND CBORES LEADING TO DATUM -A-~~
   ~~D. SURFACES DEFINED IN NOTE 7.~~

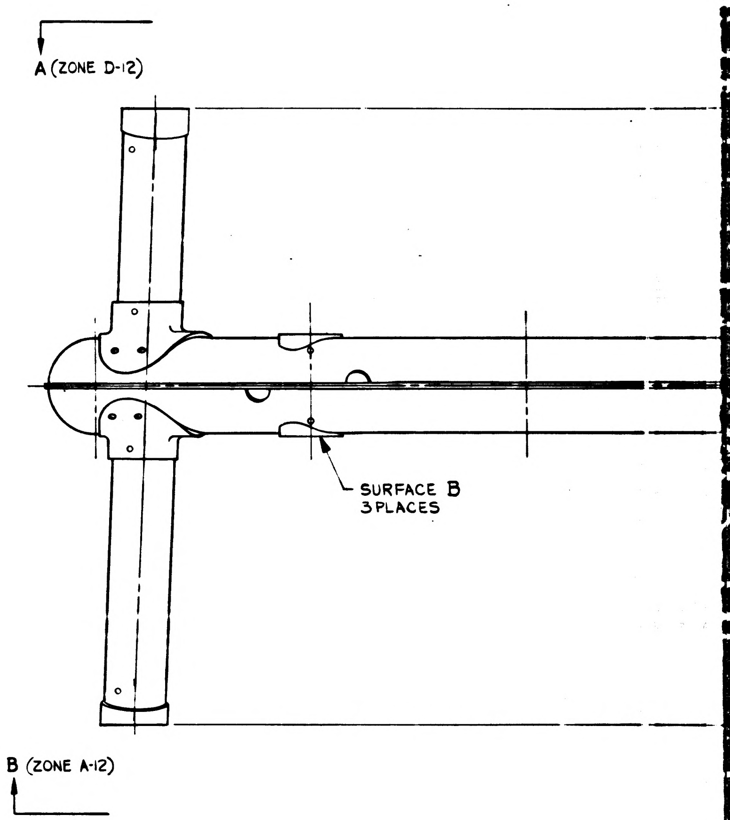
9. TAG USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

10. ANODIZE PER MIL-A-8625A-TYPE II, MASK COUNTER BORES X, Y, Z, S, T AND ALL THREADED HOLES.

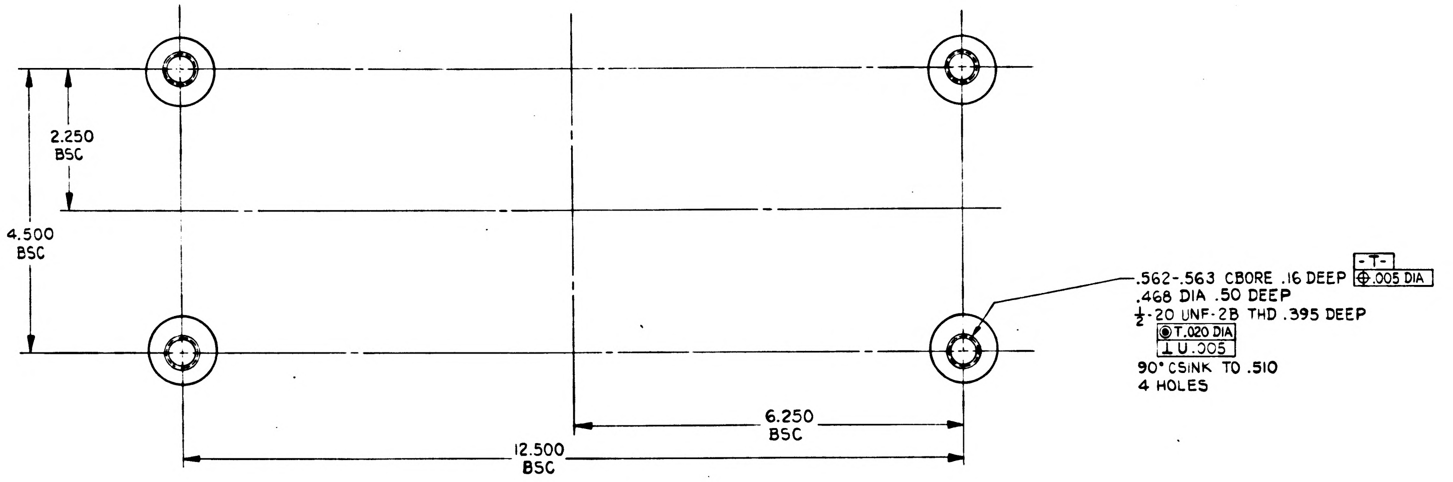


THD. THRU PER MS 33646 ⊚R .002 DIA FOR MS 21209-F4-15 INSERT
.562-.563 CBORE .16 DEEP -S- ⊕ .005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
⊚ S .020 DIA
⊥ V .005
90° CSINK TO .510
4 HOLES
.312 DIA THRU
C (ZONE A-8)
C
11.854 BSC
8.000 BSC
4.000 BSC
5.927 BSC
THD. THRU PER MS 33646 FOR MS 21209-F5-15 INSERT ⊚ R .002 DIA
6.844 BSC
10.266 BSC
5.875 BSC
11.750 BSC

VIEW A-A

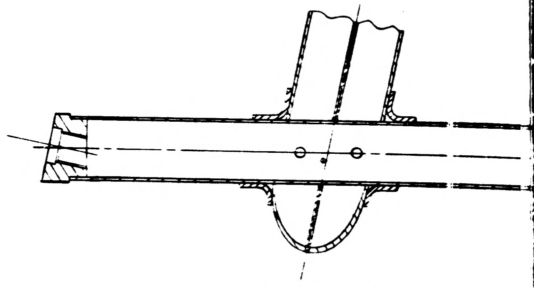


A (ZONE D-12)
SURFACE B 3 PLACES
B (ZONE A-12)



2.250 BSC
4.500 BSC
6.250 BSC
12.500 BSC
.562-.563 CBORE .16 DEEP -T- ⊕ .005 DIA
.468 DIA .50 DEEP
½-20 UNF-2B THD .395 DEEP
⊚ T .020 DIA
⊥ U .005
90° CSINK TO .510
4 HOLES

PARTIAL VIEW B-B

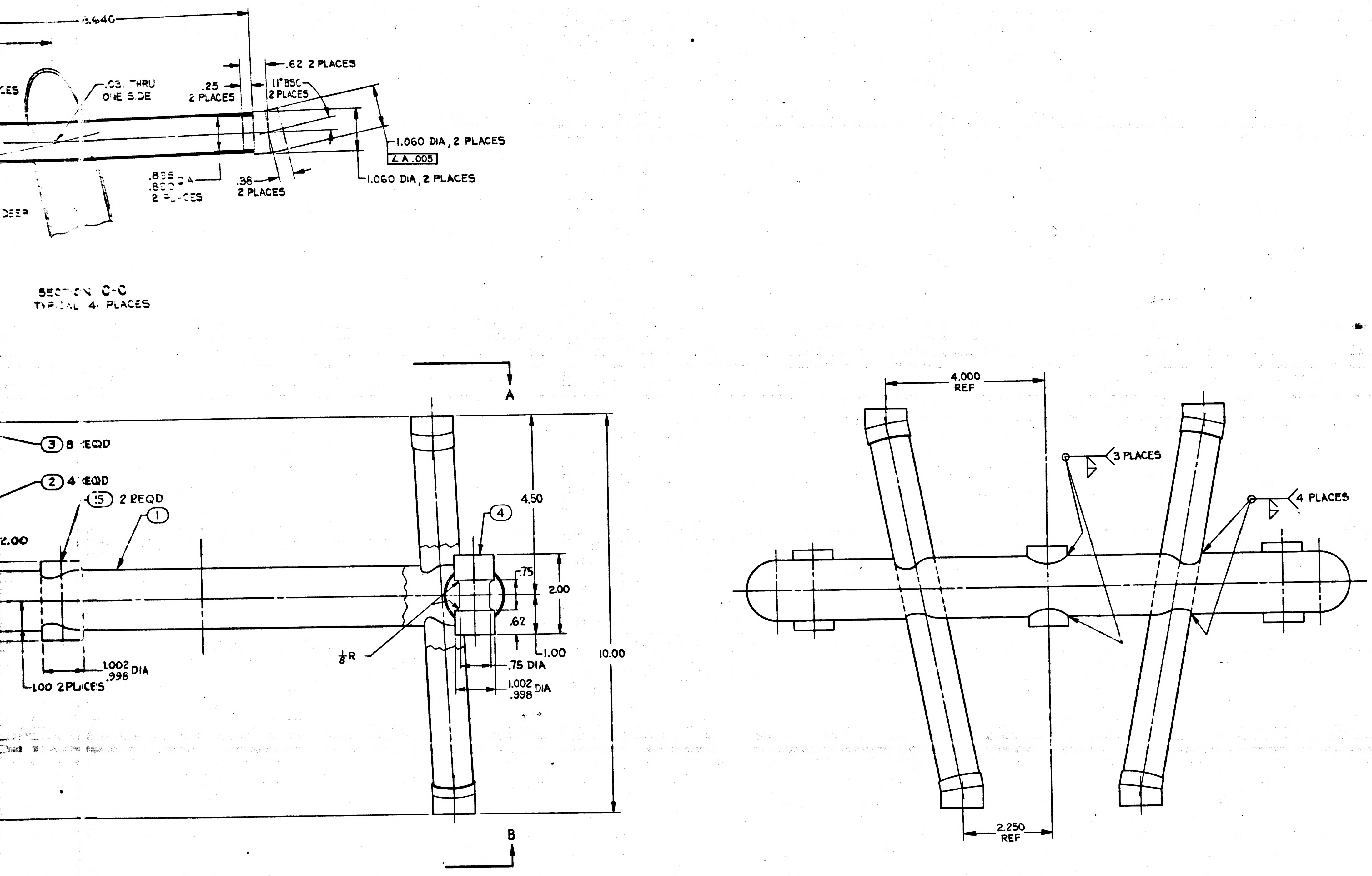


SECTION C-C

6899952 G

1/6899952

REVISIONS 15435					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER DO 58783		15 Dec 64	RL



4.640
.03 THRU ONE SIDE
.25 2 PLACES
11° BSC 2 PLACES
.62 2 PLACES
1.060 DIA, 2 PLACES
⊥ A .005
1.060 DIA, 2 PLACES
.835 .830 DIA 2 PLACES
.38 2 PLACES
DEEP
SECTION C-C
TYPICAL 4 PLACES
A
③ 8 REQD
② 4 REQD
⑮ 2 REQD
①
2.00
④
4.50
.75
2.00
.62
1.00
10.00
1/8 R
.75 DIA
1.002 .998 DIA
1.002 .996 DIA
1.00 2 PLACES
B
4.000 REF
3 PLACES
4 PLACES
2.250 REF

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 15435 DATE 1/13/65

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2C	5	2	6899953-005	INSERT, SPOOL
SEE NOTE 2C	4	1	6899953-004	INSERT SPOOL STEPPED
SEE NOTE 2D	3	8	6899953-003	FOOT, MOUNTING
SEE NOTE 2B	2	4	6899953-002	LEG
	1	1	6899959	RING, BLANK

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN
FRACTIONS +— − DECIMALS ±.02 ±.005 ANGLES +— −	ACSP PN
DO NOT SCALE THIS DRAWING	DRAWN R. Tomasne DATE 27 OCT 64 CHECKED C. Pujda 9 DEC 64 APPROVAL J. Haven 10 DEC 64 APPROVAL 11 DEC 64
MATERIAL —	NASA APPROVAL 1-13-65 MIT APPROVAL 1/4/65 1/13/65
CONTRACT NAS 9-497	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION-LEM
(INSEPARABLE ASSEMBLY,
WELDMENT)

CODE IDENT NO. SIZE J 6899953
SCALE FULL SHEET 1 OF 1

NEXT ASSY	USED ON
6899952	6899950-011

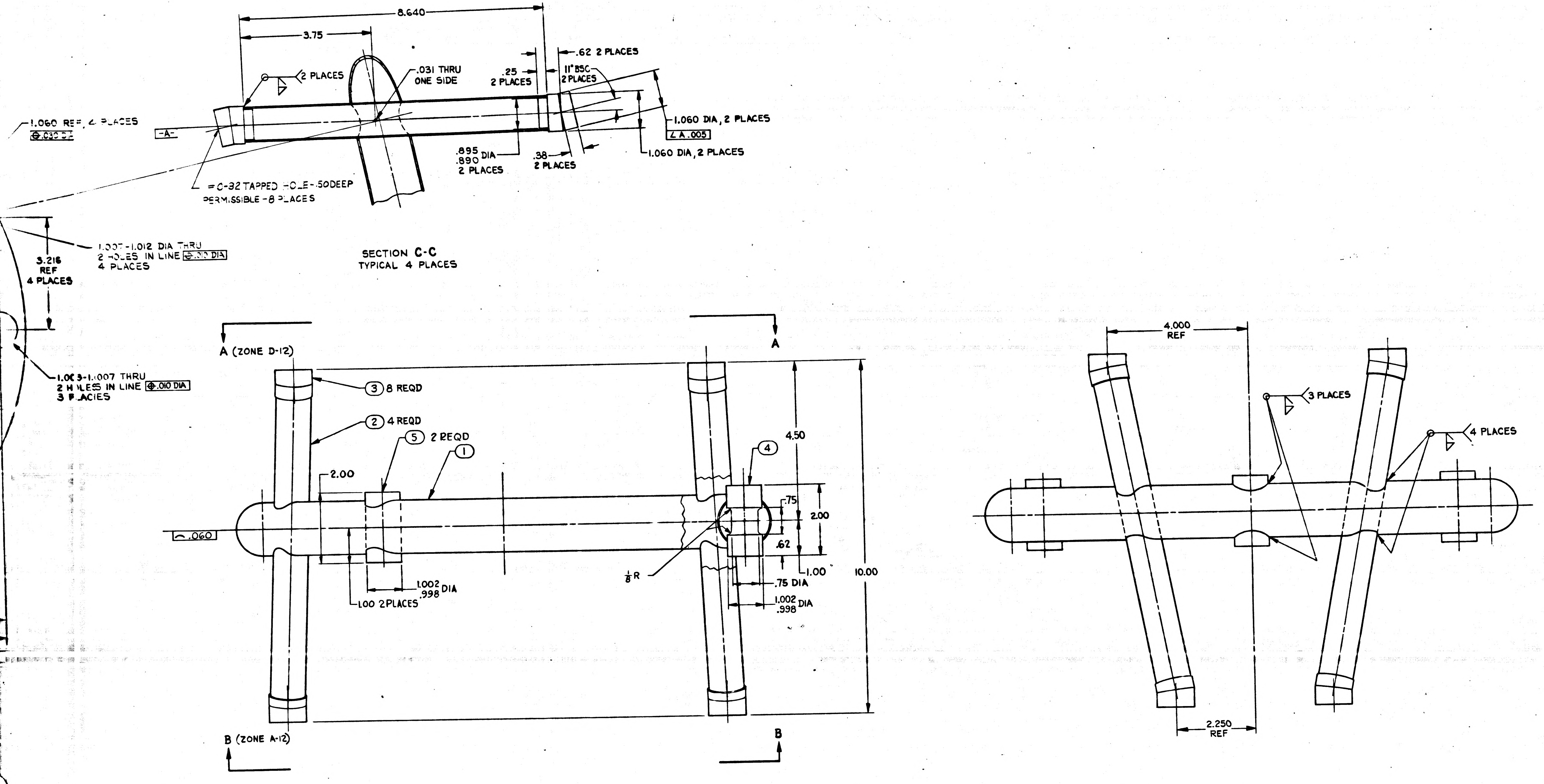
APPLICATION

Charleston 10 Dec 64

6899953

3F

F3


8.640
3.75
2 PLACES
.031 THRU
ONE SIDE
.25
2 PLACES
.62 2 PLACES
11° BSC
2 PLACES
1.060 DIA, 2 PLACES
∠ A .005
1.060 DIA, 2 PLACES
.895
.890 DIA
2 PLACES
.38
2 PLACES
1.060 REF, 4 PLACES
⊕ .030 DIA
-A-
#0-32 TAPPED HOLE-.50 DEEP
PERMISSIBLE-8 PLACES
3.216
REF
4 PLACES
1.007-1.012 DIA THRU
2 HOLES IN LINE ⊕ .010 DIA
4 PLACES
SECTION C-C
TYPICAL 4 PLACES
1.003-1.007 THRU
2 HOLES IN LINE ⊕ .010 DIA
3 PLACES
A (ZONE D-12)
A
③ 8 REQD
② 4 REQD
⑤ 2 REQD
①
④
2.00
4.50
.75
2.00
.62
1.00
10.00
⌒ .060
1.002
.998 DIA
1.00 2 PLACES
1/8 R
.75 DIA
1.002
.998 DIA
B (ZONE A-12)
B
4.000
REF
3 PLACES
4 PLACES
2.250
REF

REVISED REL

FOR INFOR

CLASS B RELEASE

SEE NOTE 2C	5	2	6899953-005
SEE NOTE 2C	4	1	6899953-004
SEE NOTE 2D	3	8	6899953-003
SEE NOTE 2B	2	4	6899953-002
			6899959
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER

LIST OF PA

NEXT ASSY	USED ON
6899952	6899950-01

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	±.02	+ —
−	±.005	−

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN R. [illegible] DATE 8 DEC 64
CHECKED [illegible] 9 DEC 64
APPROVAL [illegible] 10 DEC 64
APPROVAL [illegible] 11 DEC 64
NASA APPROVAL W. J. [illegible]
MIT APPROVAL [illegible]

Chan 4 [illegible] 10 DEC 64

6899953

E-2

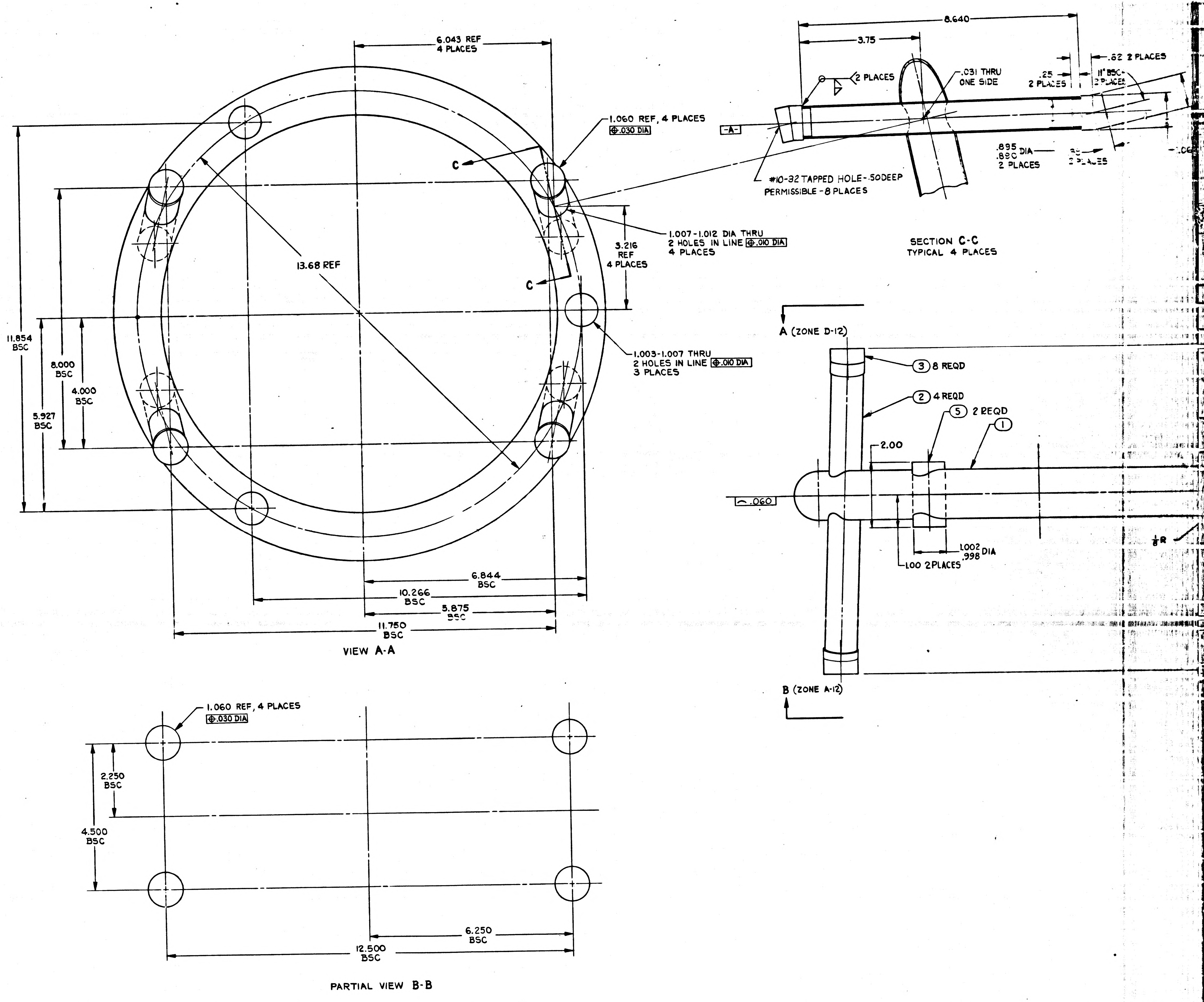
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:

   B. ALUMINUM ALLOY TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES-2106) 1.000 O.D., .049 WALL.
   C. ALUMINUM ALLOY PER QQ-A-200/8 TEMPER T-6. (6061 ES-2106)

   D. PRECISION CAST PER MIL-C-11866 USING ALUMINUM ALLOY PER QQ-A-601 CLASS 10, COND T-6 (355)(ES-2151) AND INSPECT PER MIL-C-6021, CLASS IA, LOW STRESS. *(ES-2890-1)*
3. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   B. SURFACE ROUGHNESS MUST NOT EXCEED $^{125}\surd$.

6. WELD AND INSPECT PER MIL-W-8604.
7. HEAT TREAT TO TEMPER T-6 PER MIL-H-6088 (ES-2032, ES-2021)
8. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
9. *STRESS RELIEVE AT 350° FOR 3 HOURS.*


6.043 REF
4 PLACES
1.060 REF, 4 PLACES
⊕.030 DIA
C
C
13.68 REF
3.216
REF
4 PLACES
1.007-1.012 DIA THRU
2 HOLES IN LINE ⊕.010 DIA
4 PLACES
1.003-1.007 THRU
2 HOLES IN LINE ⊕.010 DIA
3 PLACES
11.854
BSC
8.000
BSC
4.000
BSC
5.927
BSC
6.844
BSC
10.266
BSC
5.875
BSC
11.750
BSC
8.640
3.75
2 PLACES
.031 THRU
ONE SIDE
.25
2 PLACES
.62 2 PLACES
11° BSC
2 PLACES
-A-
.895
.890
DIA
2 PLACES
2 PLACES
#10-32 TAPPED HOLE-.50 DEEP
PERMISSIBLE-8 PLACES
A (ZONE D-12)
③ 8 REQD
② 4 REQD
⑤ 2 REQD
①
2.00
⌒.060
1.002
.998
DIA
1.00 2 PLACES
1/8 R
B (ZONE A-12)
1.060 REF, 4 PLACES
⊕.030 DIA
2.250
BSC
4.500
BSC
6.250
BSC
12.500
BSC

SECTION C-C
TYPICAL 4 PLACES

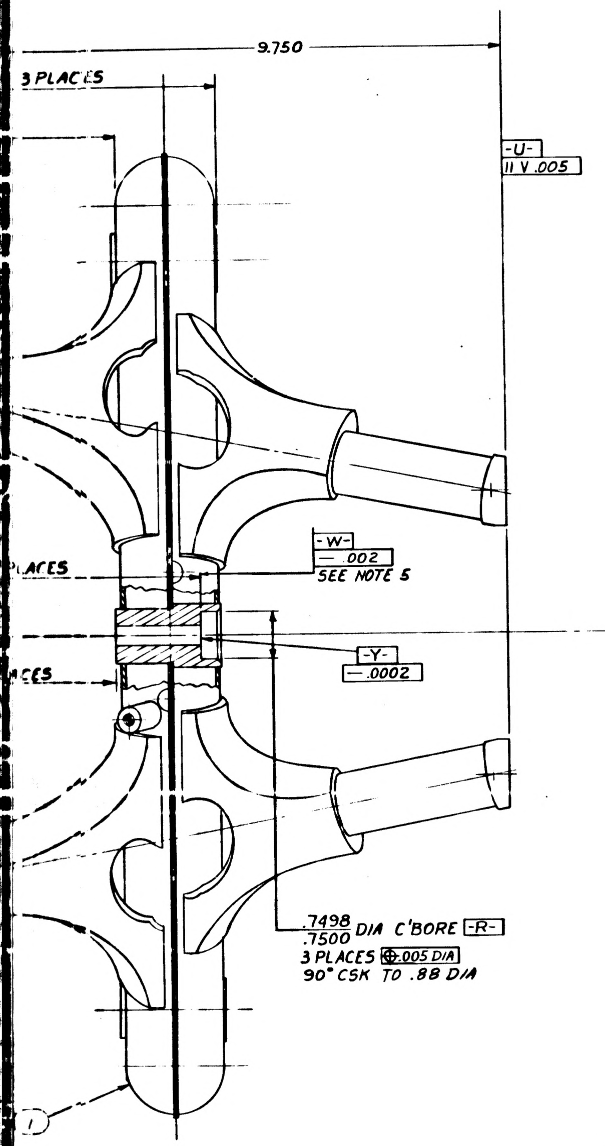
VIEW A-A

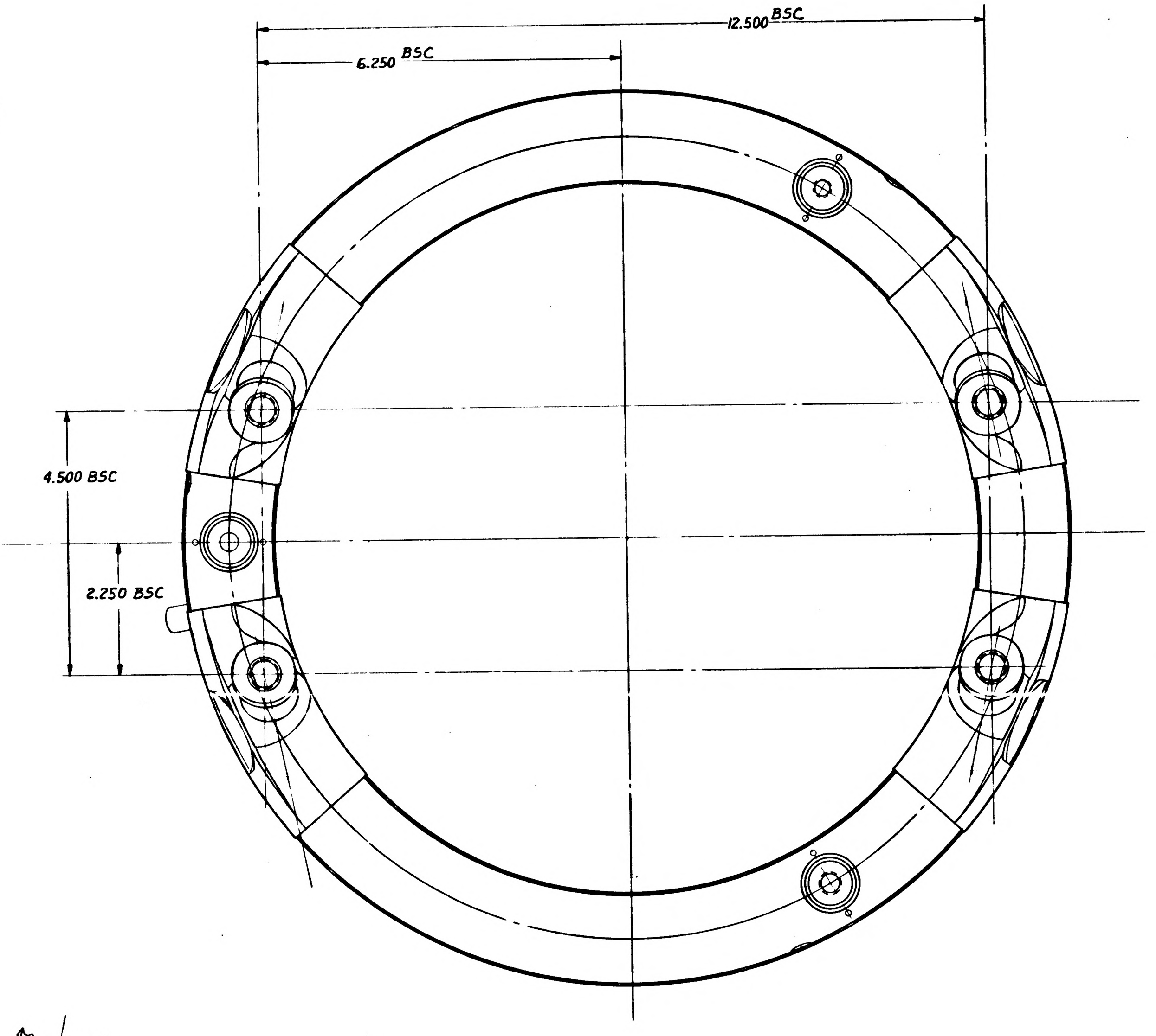
PARTIAL VIEW B-B

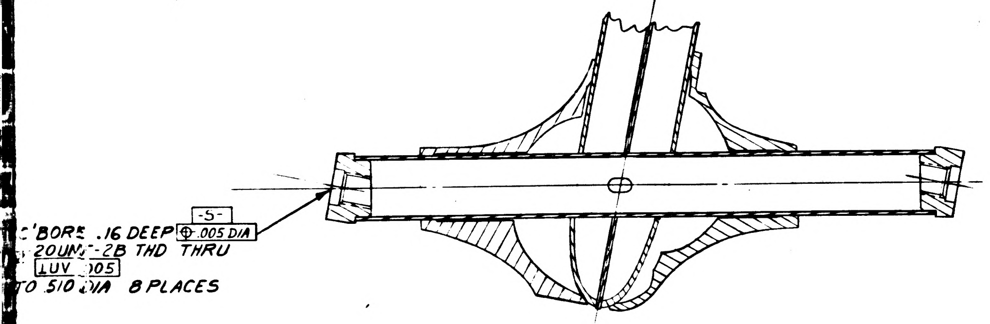
6899953

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61663		3 MAR 66	R.K. CP
B		INITIAL RELEASE CLASS A PER TDRR		12 MAR 66	OKD OKD
C		REVISED PER TDRR 29577		21-JUN 66	


9.750
3 PLACES
-U-
// V .005
PLACES
ACES
-W-
— .002
SEE NOTE 5
-Y-
— .0002
.7498
.7500 DIA C'BORE -R-
3 PLACES ⊕ .005 DIA
90° CSK TO .88 DIA
1


12.500 BSC
6.250 BSC
4.500 BSC
2.250 BSC


-S-
C'BORE .16 DEEP ⊕ .005 DIA
20UN -2B THD THRU
⊥UV .005
TO .510 DIA 8 PLACES

SECTION A-A

TYPICAL 4 PLACES

SEE NOTE 9

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	AR	1010298	CHEMICAL FILM
1	1	6899981	BASE, NAVIGATION - LEM (BRAZED)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899978 -011	6899980-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 22 DEC 65
CHECKED J.A. KERN 22 DEC 65
APPROVAL AMINSTER 22 DEC 65
CONTRACT NAS 9- 497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

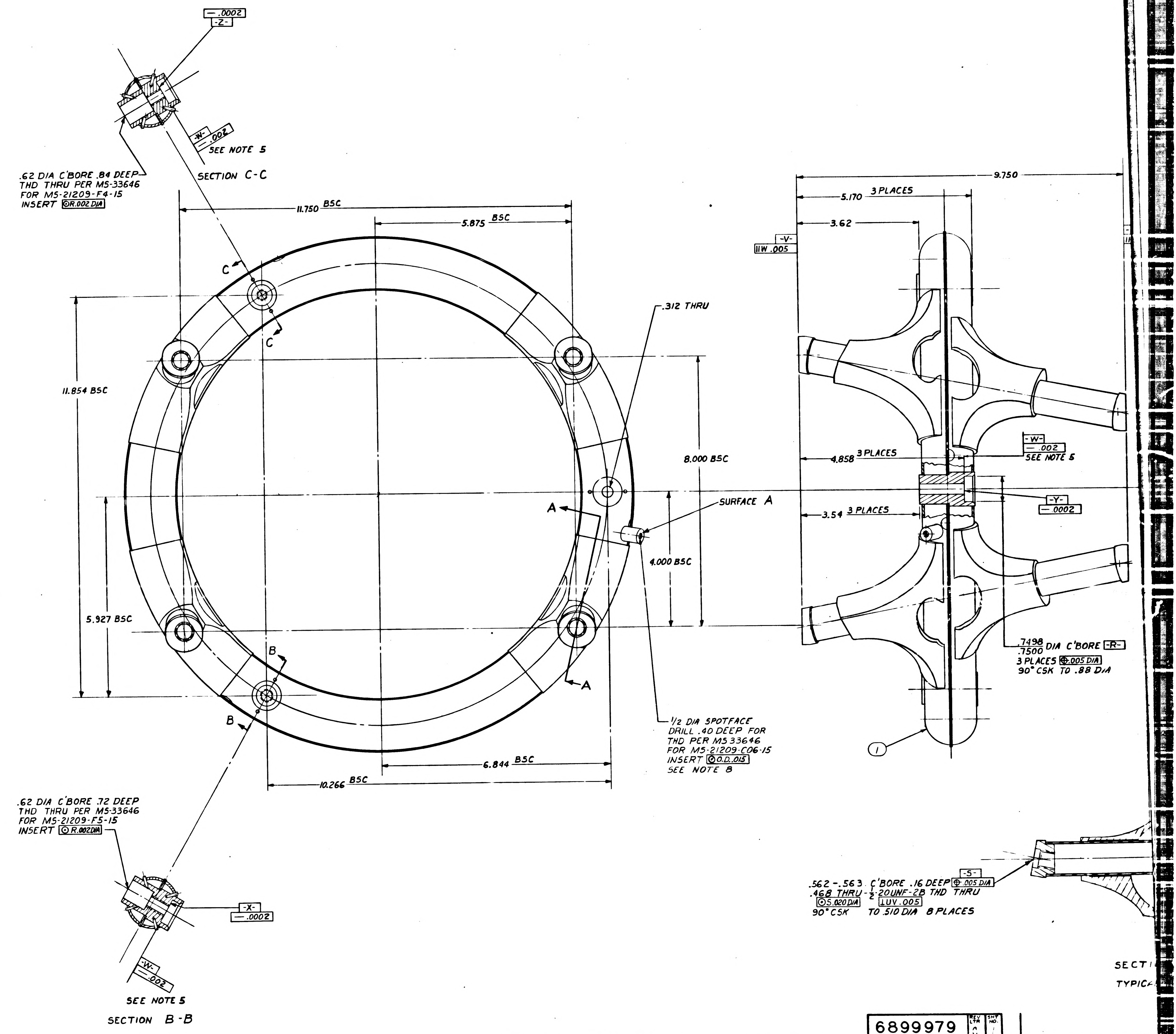
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION - LEM
(INSEPARABLE ASSEMBLY, MACHINING)

SIZE J2
CODE IDENT NO. 80230
6899979
SCALE 1:1
SHEET 1 OF 1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.
3. MUST BE FREE FROM BURRS.
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.
5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- AND -Z-.
6. APPLY CHEMICAL FILM PER MIL-C-5541A, CLASS I GRADE C, EXCEPT SURFACE A (SEE NOTE 8).
7. TAG USING DRAWING NUMBER PER ND1002019.
8. APPLY ELECTRICALLY CONDUCTIVE CHEMICAL FILM TO SURFACE A PER ND1002040 USING ITEM ②.
9. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.



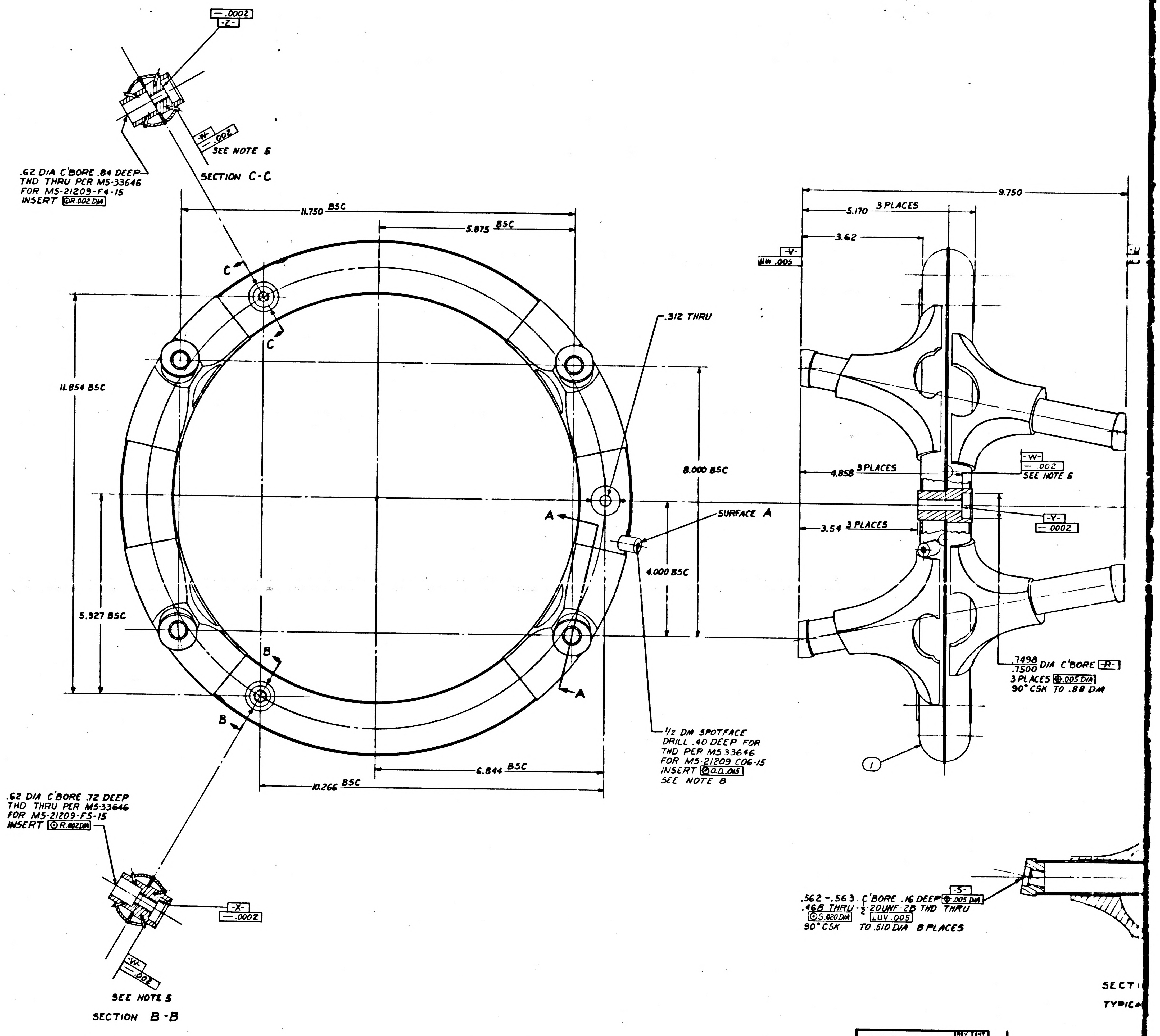
— .0002
-Z-
-W-
— .002
SEE NOTE 5
SECTION C-C
.62 DIA C'BORE .84 DEEP
THD THRU PER MS-33646
FOR MS-21209-F4-15
INSERT ◎R.002 DIA
11.750 BSC
5.875 BSC
C
C
11.854 BSC
.312 THRU
8.000 BSC
A
SURFACE A
4.000 BSC
5.927 BSC
B
B
A
1/2 DIA SPOTFACE
DRILL .40 DEEP FOR
THD PER MS 33646
FOR MS-21209-C06-15
INSERT ◎O.D..015
SEE NOTE 8
6.844 BSC
10.266 BSC
.62 DIA C'BORE .72 DEEP
THD THRU PER MS-33646
FOR MS-21209-F5-15
INSERT ◎R.002 DIA
-X-
— .0002
-W-
— .002
SEE NOTE 5
SECTION B-B
9.750
5.170 3 PLACES
3.62
-V-
IIW .005
-W-
— .002
SEE NOTE 5
4.858 3 PLACES
-Y-
— .0002
3.54 3 PLACES
.7498
.7500 DIA C'BORE -R-
3 PLACES ⊕.005 DIA
90° CSK TO .88 DIA
①
-S-
.562-.563 C'BORE .16 DEEP ⊕.005 DIA
.468 THRU - 1/2-20UNF-2B THD THRU
◎S.020 DIA ⊥UV.005
90° CSK TO .510 DIA 8 PLACES
SECTI
TYPIC

6899979 C

17 6899979

NOTES:

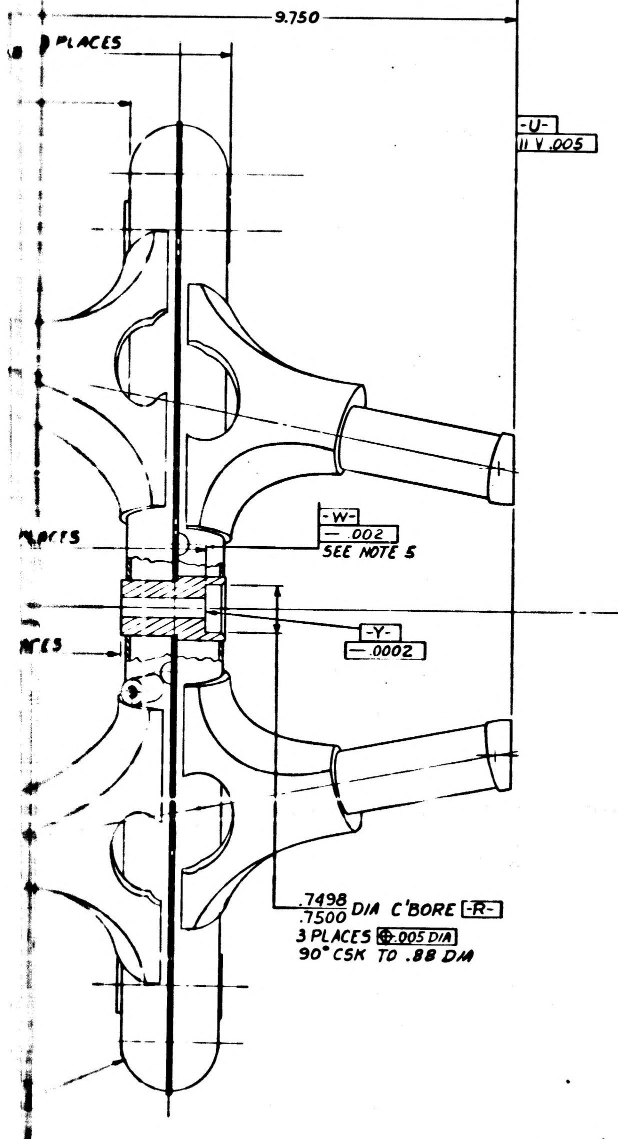
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.
3. MUST BE FREE FROM BURRS.
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.
5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- AND -Z-.
6. APPLY CHEMICAL FILM PER MIL-C-5541A, CLASS I GRADE C, EXCEPT SURFACE A (SEE NOTE 8). PRECLEANING OF THE BASE METAL SHALL BE ACCOMPLISHED USING A NON-ETCHANT SOLUTION.
7. TAG USING DRAWING NUMBER PER ND1002019.
8. APPLY ELECTRICALLY CONDUCTIVE CHEMICAL FILM TO SURFACE A PER ND1002040 USING ITEM ②.
9. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

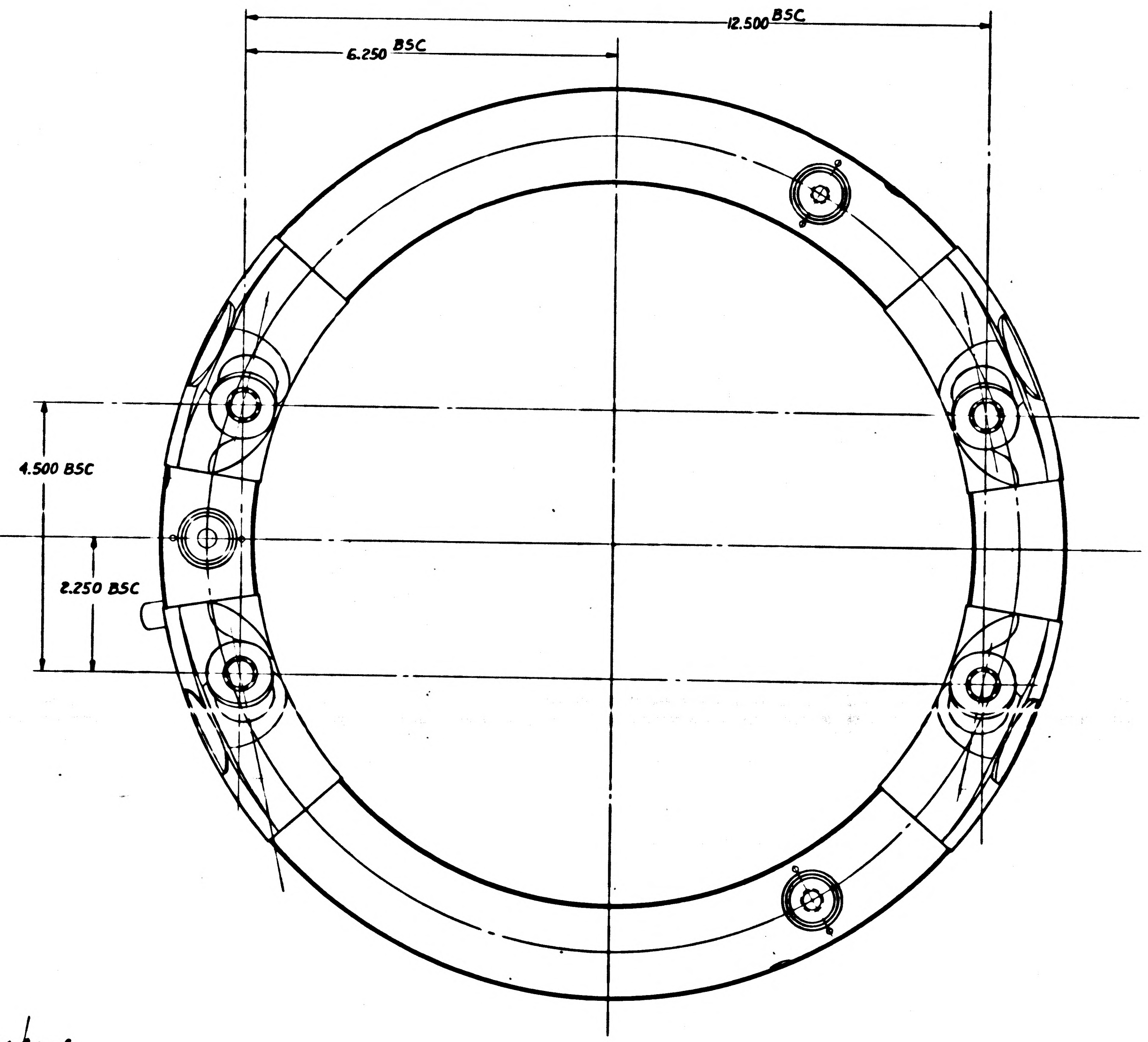

— .0002
-Z-
-W- — .002
SEE NOTE 5
SECTION C-C
.62 DIA C'BORE .84 DEEP
THD THRU PER MS-33646
FOR MS-21209-F4-15
INSERT ⊙R.002 DIA
11.750 BSC
5.875 BSC
C
C
11.854 BSC
5.927 BSC
.312 THRU
8.000 BSC
4.000 BSC
A
A
SURFACE A
B
B
6.844 BSC
10.266 BSC
1/2 DIA SPOTFACE
DRILL .40 DEEP FOR
THD PER MS 33646
FOR MS-21209-C06-15
INSERT ⊙O.D.015
SEE NOTE 8
9.750
5.170 3 PLACES
3.62
-V-
ⱳ .005
4.858 3 PLACES
3.54 3 PLACES
-W-
— .002
SEE NOTE 5
-Y-
— .0002
.7498
.7500 DIA C'BORE -R-
3 PLACES ⊕.005 DIA
90° CSK TO .88 DIA
①
.62 DIA C'BORE .72 DEEP
THD THRU PER MS-33646
FOR MS-21209-F5-15
INSERT ⊙R.002 DIA
-X-
— .0002
-W-
— .002
SEE NOTE 5
SECTION B-B
.562 -.563 C'BORE .16 DEEP ⊕.005 DIA
-S-
.468 THRU - 1/2-20UNF-2B THD THRU
⊙S.020 DIA
⊥UV.005
90° CSK
TO .510 DIA 8 PLACES
SECT
TYPICA

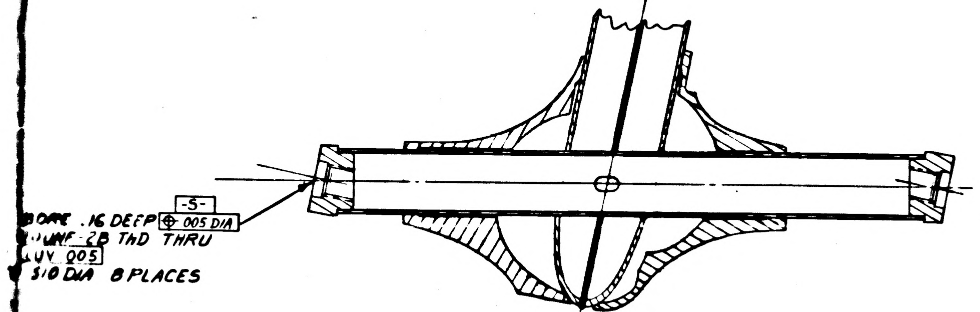
2H

6899979	REV LTR	SHT NO.
	D	1

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61663		9 MAR 66	R K / CP
B		INITIAL RELEASE CLASS A PER TDRR 27174		12 MAR 66	DKD / DKD
C		REVISED PER TDRR 29577		21-JUN 66	
D		REVISED PER TDRR 35409		16 JAN 68	JRK / JAL


9.750
PLACES
-U-
// V .005
-W-
— .002
SEE NOTE 5
-Y-
— .0002
.7498 / .7500 DIA C'BORE -R-
3 PLACES ⊕ .005 DIA
90° CSK TO .88 DIA


12.500 BSC
6.250 BSC
4.500 BSC
2.250 BSC


-S-
BORE .16 DEEP ⊕ .005 DIA
UNF-2B THD THRU
UV .005
.510 DIA 8 PLACES

SECTION A-A

TYPICAL 4 PLACES

2x

SEE NOTE 9

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	AR	1010298	CHEMICAL FILM
1	1	6899981	BASE, NAVIGATION-LEM (BRAZED)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899978-011	6899980-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN 21 DEC 65 DATE
CHECKED J.A. KERN 22 DEC 65
APPROVAL MUNSTER 22 DEC 65
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION - LEM
(INSEPARABLE ASSEMBLY, MACHINING)

SIZE J2
CODE IDENT NO. 80230
6899979
SCALE 1:1
SHEET 1 OF 1

6899979 REV D

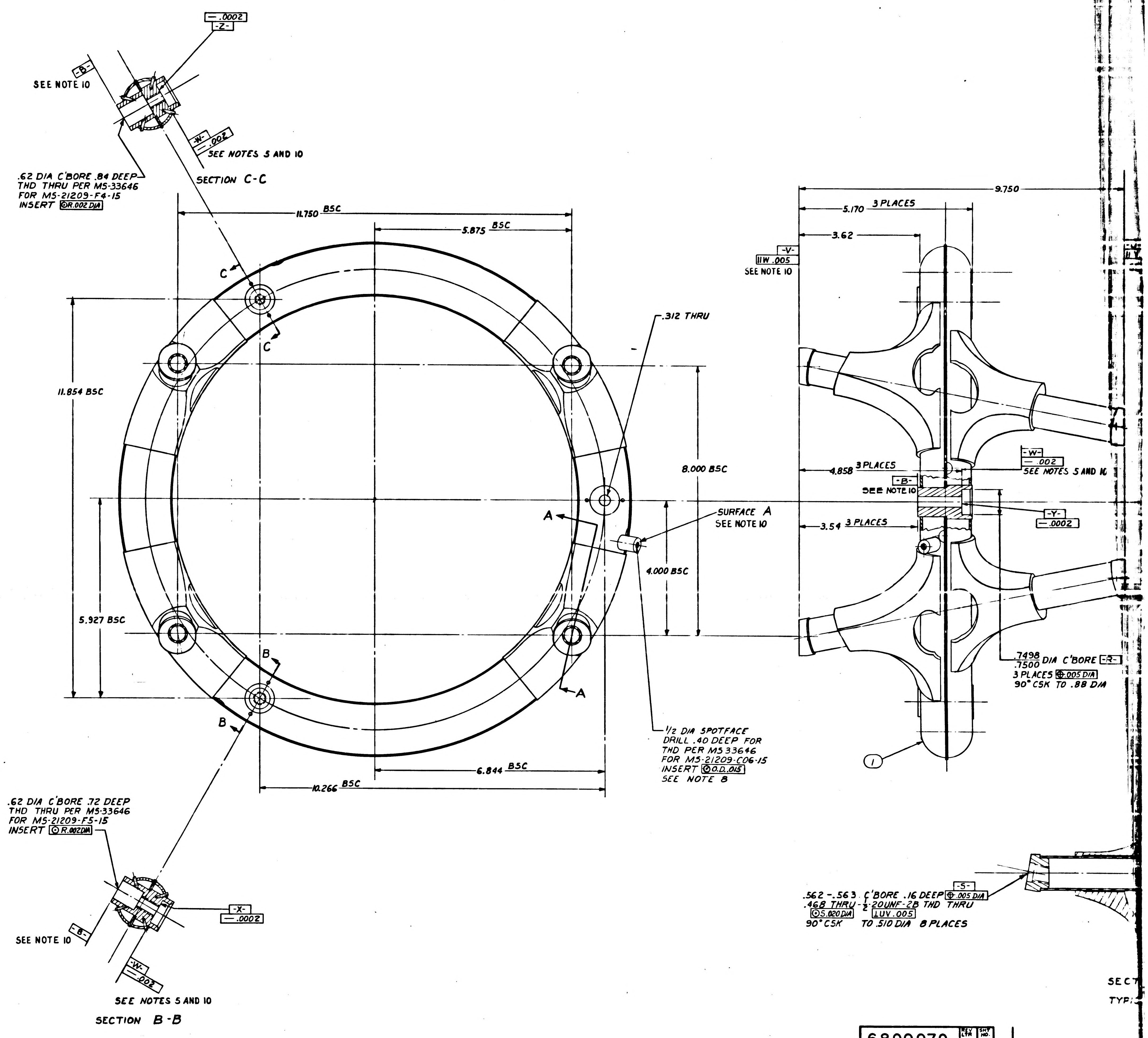
6899979 REV LTR D SHT NO 1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   B. MACHINED SURFACE ROUGHNESS MUST NOT EXCEED 63√.
3. MUST BE FREE FROM BURRS.
4. ALL DIMENSIONS MUST BE WITHIN SPECIFIED LIMITS AT A UNIFORM PART TEMPERATURE OF 65° TO 75° F.
5. WHEN MACHINING TO OBTAIN DATUM -V-, DATUM PLANE -W- IS DEFINED BY THE HIGH POINTS OF SURFACES -X-, -Y- AND -Z-.
6. APPLY CHEMICAL FILM PER MIL-C-5541A, CLASS I GRADE C, EXCEPT SURFACE A (SEE NOTE 8). PRECLEANING OF THE BASE METAL SHALL BE ACCOMPLISHED USING A NON-ETCHANT SOLUTION.
7. TAG USING DRAWING NUMBER PER ND1002019.
8. APPLY ELECTRICALLY CONDUCTIVE CHEMICAL FILM TO SURFACE A PER ND1002040 USING ITEM ②.
9. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.
10. CONFORMAL COAT ITEM ① PER ND1002035 WITH THE FOLLOWING EXCEPTIONS:
    A. PRIOR TO COATING THE ASSEMBLY, BAKE AT 170°F TO 200°F, FOR 1 TO 1½ HOURS WITHIN TWO HOURS OF REMOVAL OF PART FROM OVEN, PROCEED TO STEP C.
    B. MIX ITEMS ③, ④ AND ⑤ AS FOLLOWS:

P/N	PARTS BY WEIGHT
1010295	100 ± 1%
1010297	82 ± 1%
TT-M-261	100-150

    C. APPLY ABOVE MIXTURE PER ND1002035 TO OBTAIN A UNIFORM COATING WHICH WILL INCREASE THE ASSEMBLY WEIGHT BY 30 TO 60 GRAMS. (THE 5 MIL. FILM THICKNESS NOTE OF ND1002035 DOES NOT APPLY).
    D. AFTER CURING, BUBBLES AND OTHER DEFECTS SHALL BE MECHANICALLY OPENED AND REFILLED USING THE ABOVE REQUIREMENTS.
    E. ALL DRILLED THRU HOLES, COUNTERBORES, THREADED HOLES, AND SURFACES -B-, -V-, -W-, -U-, AND "A" SHALL BE FREE OF THE CONFORMAL COATING.

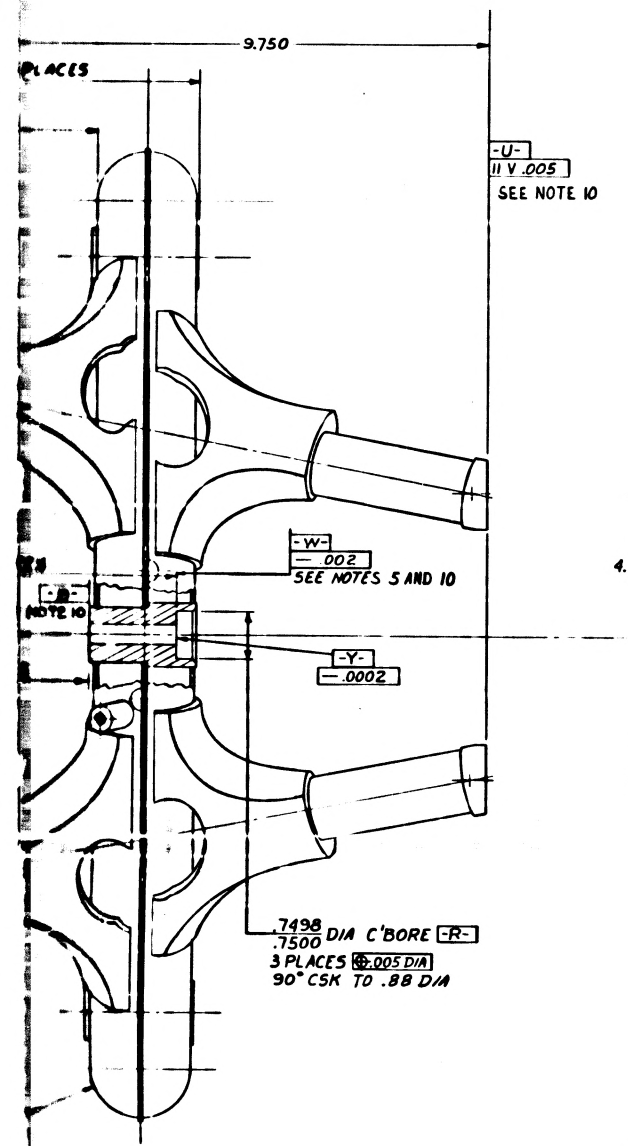

— .0002
-Z-
-B-
SEE NOTE 10
-W-
— .002
SEE NOTES 5 AND 10
.62 DIA C'BORE .84 DEEP
THD THRU PER MS-33646
FOR MS-21209-F4-15
INSERT ⊙R.002 DIA
SECTION C-C
11.750 BSC
5.875 BSC
C
C
11.854 BSC
.312 THRU
8.000 BSC
A
SURFACE A
SEE NOTE 10
4.000 BSC
5.927 BSC
B
B
A
1/2 DIA SPOTFACE
DRILL .40 DEEP FOR
THD PER MS 33646
FOR MS-21209-C06-15
INSERT ⊙O.D..015
SEE NOTE 8
6.844 BSC
10.266 BSC
.62 DIA C'BORE .72 DEEP
THD THRU PER MS-33646
FOR MS-21209-F5-15
INSERT ⊙R.002DIA
-X-
— .0002
SEE NOTE 10
-B-
-W-
— .002
SEE NOTES 5 AND 10
SECTION B-B
9.750
5.170 3 PLACES
3.62
-V-
// W .005
SEE NOTE 10
-W-
— .002
SEE NOTES 5 AND 10
4.858 3 PLACES
-B-
SEE NOTE 10
-Y-
— .0002
3.54 3 PLACES
.7498/.7500 DIA C'BORE -R-
3 PLACES ⊕.005 DIA
90° CSK TO .88 DIA
①
.562-.563 C'BORE .16 DEEP ⊕.005 DIA
-S-
.468 THRU-½-20UNF-2B THD THRU
⊙S.020 DIA
⊥UV.005
90° CSK TO .510 DIA 8 PLACES
SECT
TYP

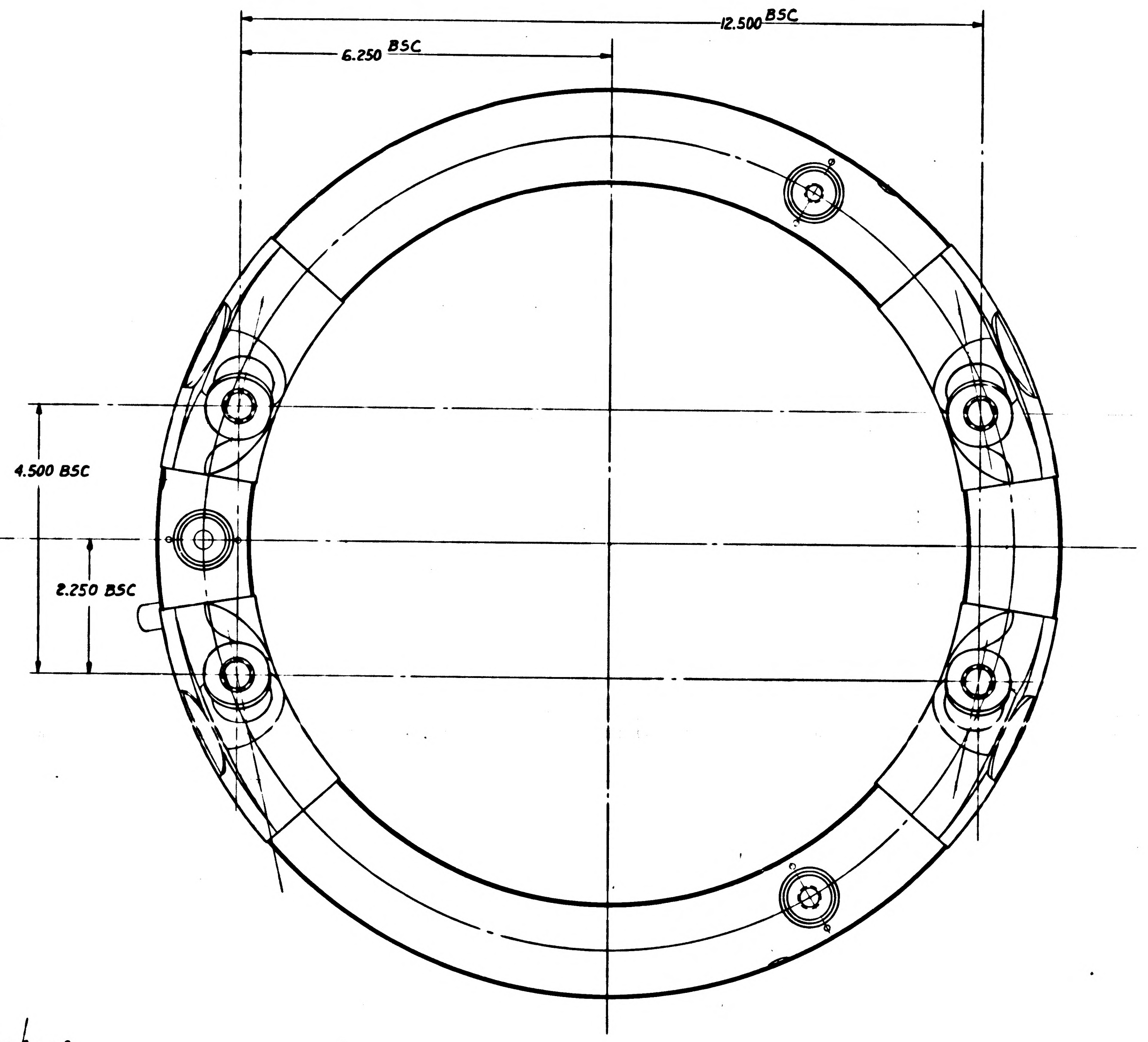
24

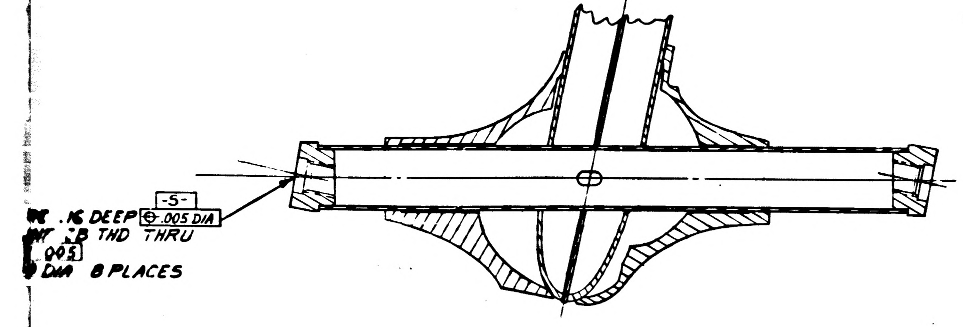
6899979 REV LTR SHT NO. 1

1-/6-8-9-9-9-7-9

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61663		9 MAR 66	R.K. CP
B		INITIAL RELEASE CLASS A PER TDRR		12 MAR 66	DKD DKD
C		REVISED PER TDRR 29577		21-JUN 66	
D		REVISED PER TDRR 35409		16 JAN 68	JRK
E		REVISED PER TDRR 35451		22 JAN 68	


9.750
PLACES
-U-
// V .005
SEE NOTE 10
-W-
— .002
SEE NOTES 5 AND 10
NOTE 10
-Y-
— .0002
.7498/.7500 DIA C'BORE -R-
3 PLACES ⊕ .005 DIA
90° CSK TO .88 DIA


12.500 BSC
6.250 BSC
4.500 BSC
2.250 BSC


-S-
.16 DEEP ⊖ .005 DIA
THD THRU
.005
DIA 8 PLACES

SECTION A-A
TYPICAL 4 PLACES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	
5	AR	TT-M-261	SOLVENT	SEE NOTES 9 & 10
4	AR	1010297	CURING AGENT	SEE NOTES 9 & 10
3	AR	1010295	RESIN, EPOXY MODIFIED	SEE NOTES 9 & 10
2	AR	1010298	CHEMICAL FILM	SEE NOTE 9
1	1	6899981	BASE, NAVIGATION - LEM (BRAZED)	

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899978 -011	6899980-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02
3 PLACE DECIMALS ±.005
ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 22 DEC 65
CHECKED [illegible] 22 DEC 65
APPROVAL [illegible]
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION - LEM
(INSEPARABLE ASSEMBLY, MACHINING)

SIZE J2
CODE IDENT NO. 80230
6899979
SCALE 1:1
SHEET 1 OF 1

6899979 REV E

99979 REV LTR E SHT NO. 1

2-/6899979

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SERIALIZE PER ND1002023, ADD APPLICABLE DASH NO. AND BOND ITEM ② PER ND1002219 METHOD II CENTERED OVER PRE-EXISTING INSEPARABLE ASSEMBLY IDENTIFICATION MARK (6899978-011) SO THAT INFORMATION READS FROM LEFT TO RIGHT, AWAY FROM THE RING.
3. ITEMS ③ THRU ⑩ WILL BE SHIPPED SEPARATED FROM THE ASSEMBLY. PACKAGE PER MIL-P-116 IA-8.
4. APPROXIMATE ASSEMBLY WEIGHT = 4 LBS
5. REFERENCE DRAWINGS:
   FAMILY TREE

CONFIGURATION
INCOMPLETE

∀ 0866689

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		INITIAL RELEASE CLASS A PER TDRR 27174		12 MAR 66	DKD DKD

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2		8	6899957-002	WASHER, FLAT
2		7	6899957-001	WASHER, FLAT
2		6	6899956	STUD, SHOULDERED
2		5	6899955	STUD, SHOULDERED AND STEPPED
2		4	NAS 674V18	BOLT, HEX HD
2		3	2899992	BOLT, IMU MOUNT
1		2	1004260-508	PLATE, IDENTIFICATION
1		1	6899978-011	NAVIGATION BASE ASSY-LEM (FINAL MACH)

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN DATE 16 DEC 65
CHECKED DEC 65
APPROVAL 22 Dec 65
APPROVAL 3/15/66
NASA APPROVAL A. C. [illegible]
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY-
LEM

CODE IDENT NO. 80230
SIZE D
6899980
SCALE
SHEET

6899980

8 0866689

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
Ⓜ A		INITIAL RELEASE CLASS A PER TDRR		12MAR 66	ORO / ORO
B		REVISED PER TDRR 29304		7JUN 66	JIM

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SERIALIZE PER ND1002023, ADD APPLICABLE DASH NO. AND BOND ITEM ② PER ND1002219 METHOD II CENTERED OVER PRE-EXISTING INSEPARABLE ASSEMBLY IDENTIFICATION MARK (6899978-011) SO THAT INFORMATION READS FROM LEFT TO RIGHT, AWAY FROM THE RING.
3. ITEMS ③ THRU ⑩ WILL BE SHIPPED SEPARATED FROM THE ASSEMBLY. PACKAGE PER MIL-P-116 IA-8.
4. APPROXIMATE ASSEMBLY WEIGHT = 4 LBS
5. REFERENCE DRAWINGS:
   FAMILY TREE

CONFIGURATION INCOMPLETE

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		4	-		10	NAS 674V19	BOLT, HEX CAP
		2	-		9	2021204	BUSHING, SLEEVING-IMU MOUNT
		2	2		8	6899957-002	WASHER, FLAT
		2	2		7	6899957-001	WASHER, FLAT
		2	2		6	6899956	STUD, SHOULDERED
		2	2		5	6899955	STUD, SHOULDERED AND STEPPED
		-	2		4	NAS 674V18	BOLT, HEX HD
		-	2		3	2899992	BOLT, IMU MOUNT
		1	1		2	1004260-508	PLATE, IDENTIFICATION
		1	1		1	6899978-011	NAVIGATION BASE ASSY-LEM (FINAL MACH)
		021	011				

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN DATE 16 DEC 65
CHECKED DEC 65
APPROVAL 22 Dec 65
APPROVAL 3/15/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

NAVIGATION BASE ASSEMBLY-LEM

CODE IDENT NO. 80230
SIZE D
6899980
SCALE
SHEET

0866689

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SERIALIZE PER ND1002023, ADD APPLICABLE DASH NO. AND BOND ITEM ② PER ND1002219 METHOD II CENTERED OVER PRE-EXISTING INSEPARABLE ASSEMBLY IDENTIFICATION MARK (6899978-011) SO THAT INFORMATION READS FROM LEFT TO RIGHT, AWAY FROM THE RING.
3. ITEMS ③ THRU ⑬ WILL BE SHIPPED SEPARATED FROM THE ASSEMBLY. PACKAGE PER MIL-P-116 IA-8.
4. APPROXIMATE ASSEMBLY WEIGHT = 4 LBS
5. REFERENCE DRAWINGS:
   FAMILY TREE

REVISIONS

	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ	A		INITIAL RELEASE CLASS A PER TDRR 27174		12 MAR 66	OKO OKO
Ⓜ	B		REVISED PER TDRR 29304		7 JUN 66	JIM P
	C		REVISED PER TDRR 32019	—	26 NOV 66	EC

CONFIGURATION INCOMPLETE

031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	1	-		13	AN960D6L	(1897004-016) WASHER, FLAT
1	1	-		12	1006783-103	SCREW, BUTTON HD HEX SOC.
1	1	-		11	6899987	STRAP, GROUND ELECTRICAL
-	4	-		10	NAS 674V19	BOLT, HEX CAP
-	2	-		9	2021204	BUSHING, SLEEVING-IMU MOUNT
2	2	2		8	6899957-002	WASHER, FLAT
2	2	2		7	6899957-001	WASHER, FLAT
2	2	2		6	6899956	STUD, SHOULDERED
2	2	2		5	6899955	STUD, SHOULDERED AND STEPPED
2	-	2		4	NAS 674V18	BOLT, HEX HD
2	-	2		3	2899992	BOLT, IMU MOUNT
1	1	1		2	1004260-508	PLATE, IDENTIFICATION
1	1	1		1	6899978-011	NAVIGATION BASE ASSY-LEM (FINAL MACH)
QUANTITY REQUIRED				LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS
DRAWN DATE 16 DEC 65
CHECKED DEC 65
APPROVAL 22 Dec 65
APPROVAL 3/15/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

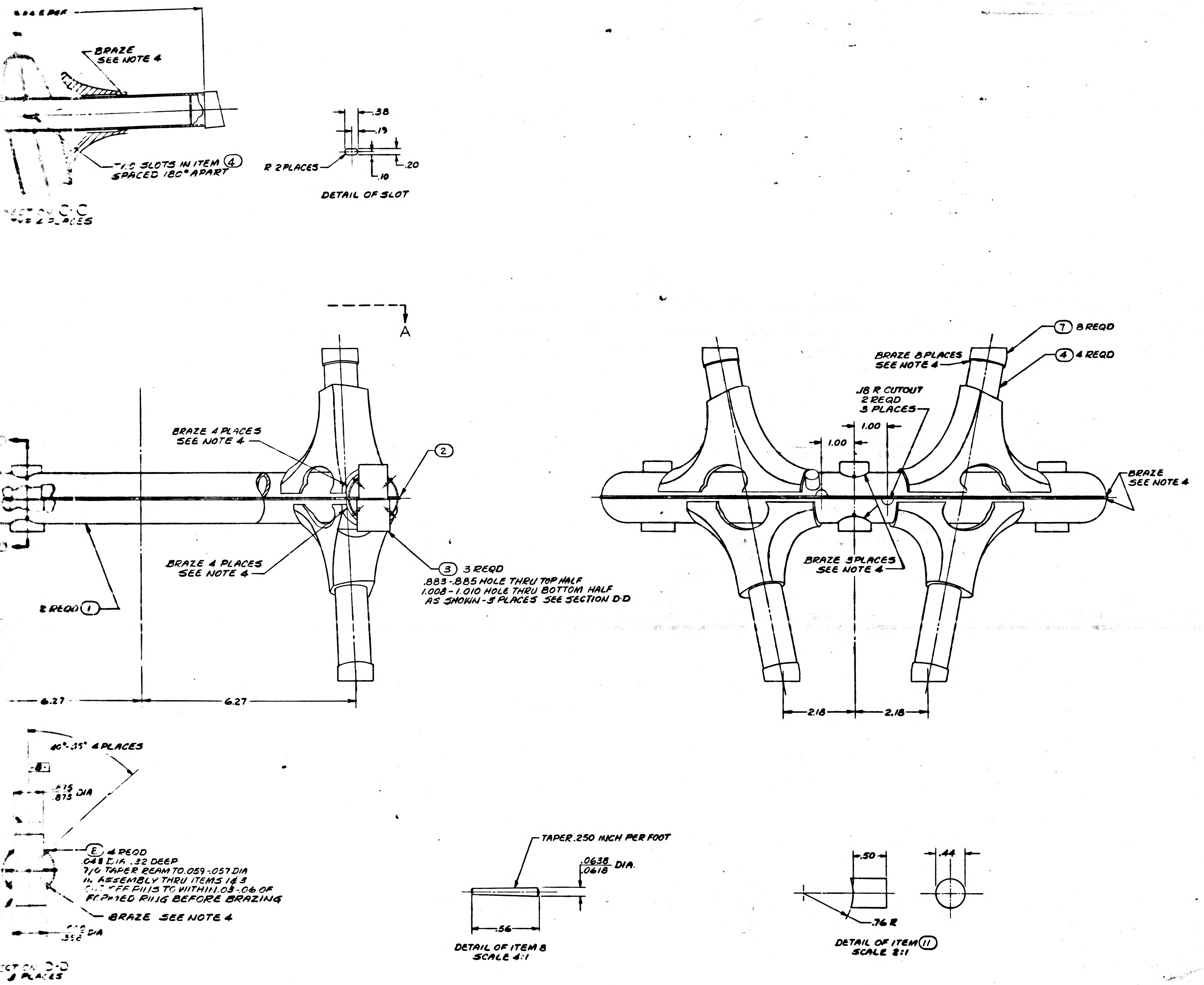
NAVIGATION BASE ASSEMBLY-LEM

CODE IDENT NO. 80230
SIZE D
6899980
SCALE
SHEET

MIL 10790-P

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61688		7 FEB 66	CP
B		INITIAL RELEASE CLASS A PER TDRR 27174		66	



BRAZE SEE NOTE 4
TWO SLOTS IN ITEM ④ SPACED 180° APART
SECTION C-C
2 PLACES
.38
.19
R 2 PLACES
.20
.10
DETAIL OF SLOT
A
BRAZE 4 PLACES SEE NOTE 4
②
BRAZE 4 PLACES SEE NOTE 4
③ 3 REQD
.883-.885 HOLE THRU TOP HALF
1.008-1.010 HOLE THRU BOTTOM HALF
AS SHOWN-3 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES SEE NOTE 4
.18 R CUTOUT 2 REQD 3 PLACES
1.00
1.00
BRAZE SEE NOTE 4
BRAZE 3 PLACES SEE NOTE 4
2.18
2.18
40°-35° 4 PLACES
.875 .873 DIA
Ⓔ 4 REQD
.048 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
DIA
SECTION D-D
3 PLACES
TAPER .250 INCH PER FOOT
.0638 .0618 DIA.
.56
DETAIL OF ITEM 8
SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪
SCALE 2:1

2H

LIST OF PARTS AND MATERIALS

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2B	11	1	6899981-004	BOSS-GROUND LUG
	10	2	6899986	SUPPORT, IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	3	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN LEMKOWSKI DATE 21 DEC 65
CHECKED 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY,
BRAZED).

SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

NEXT ASSY	USED ON
6899979	6899978-011

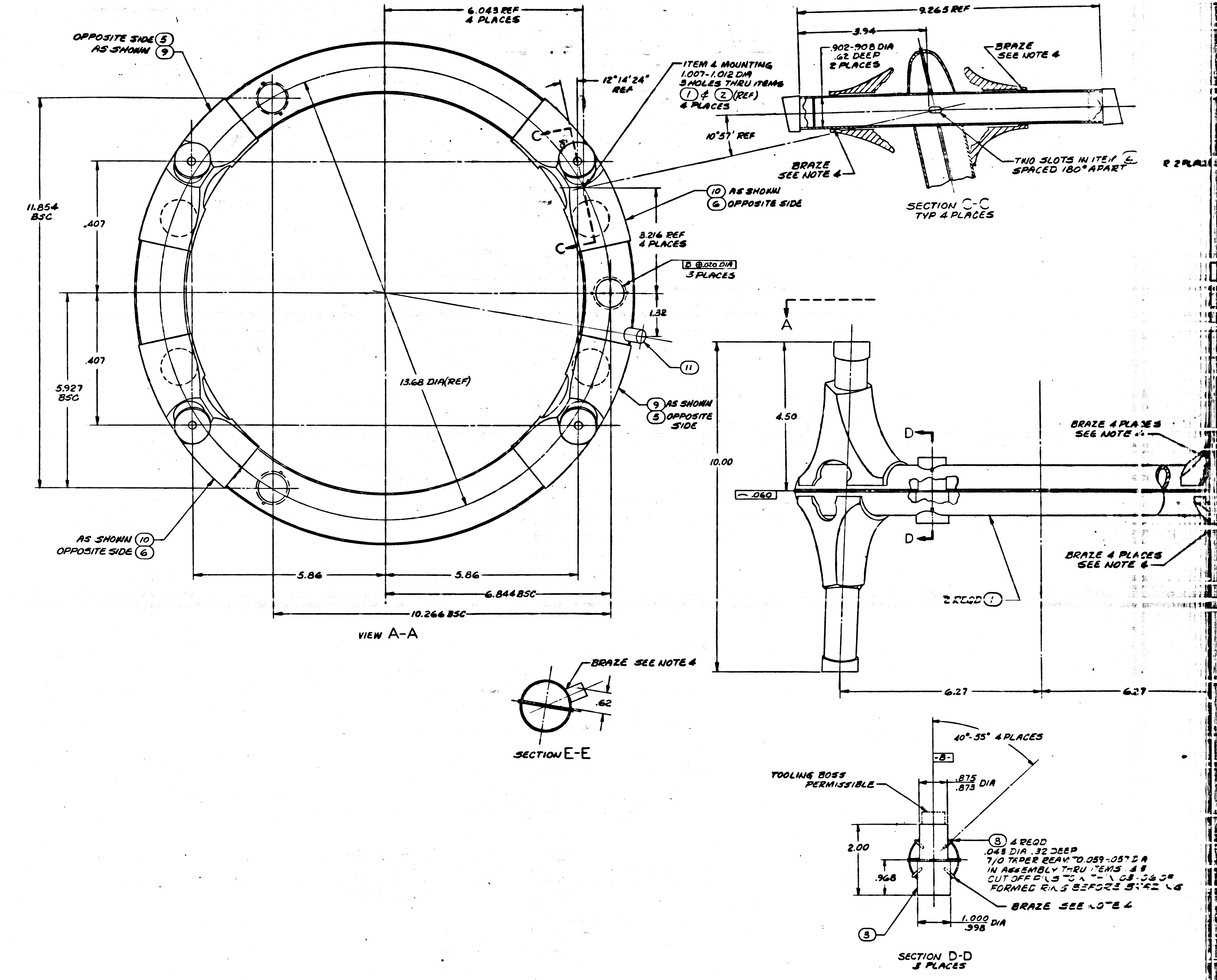
APPLICATION

6899981 B

MASTER

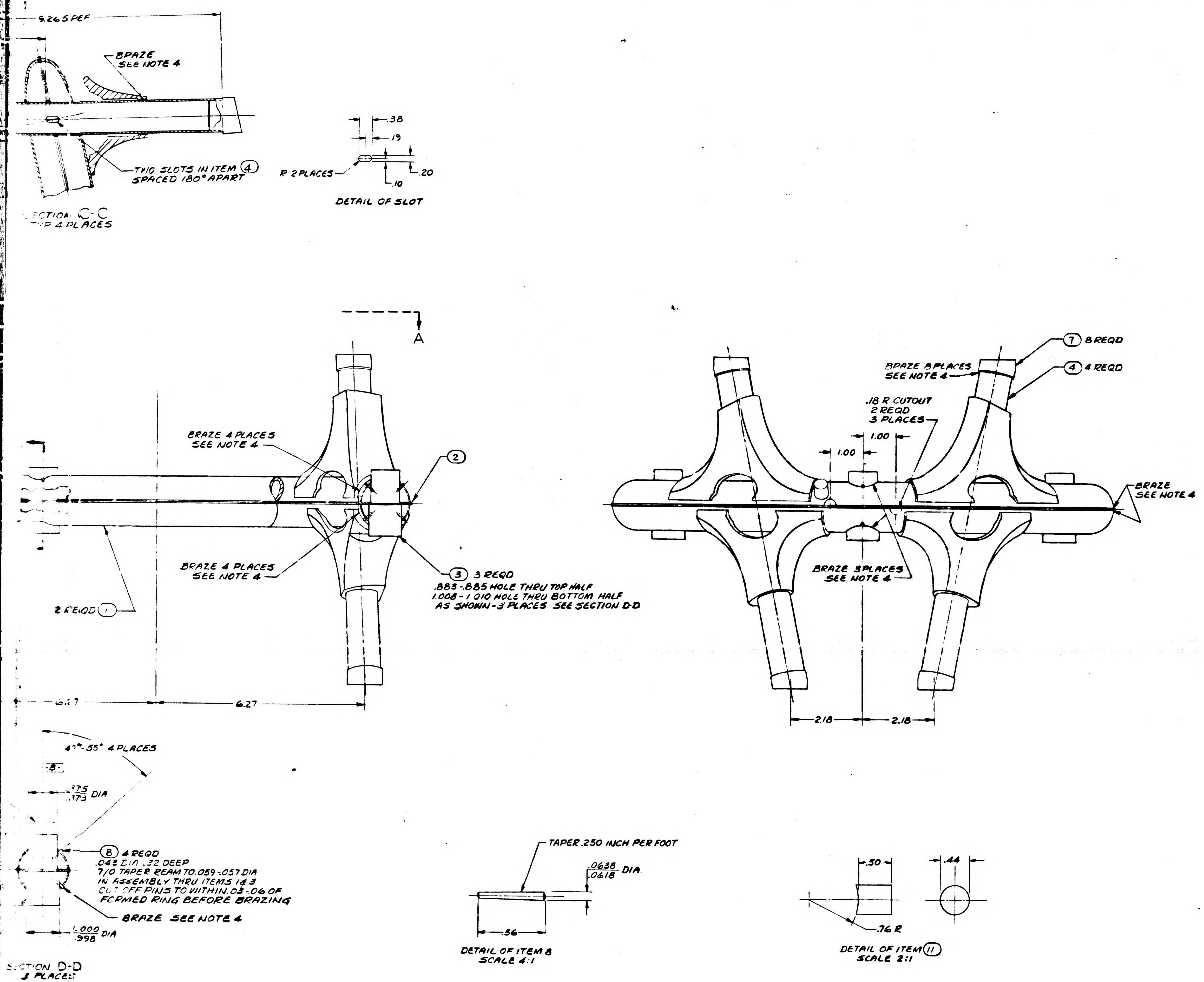
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 O.D × .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-200/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{125}$.
4. DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND 1002073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6: ES 2021)
   - A. SOLUTION HEAT TREAT AT 970°F ± 10° FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ± 5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND 1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.


6.043 REF 4 PLACES
OPPOSITE SIDE ⑤
AS SHOWN ⑨
12°14'24" REF
ITEM 4 MOUNTING 1.007-1.012 DIA 3 HOLES THRU ITEMS ① & ② (REF) 4 PLACES
C
11.854 BSC
.407
.407
5.927 BSC
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF 4 PLACES
B ⊕.020 DIA 3 PLACES
1.32
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
AS SHOWN ⑩
OPPOSITE SIDE ⑥
5.86
5.86
6.844 BSC
10.266 BSC
VIEW A-A
9.265 REF
3.94
.902-.908 DIA .62 DEEP 2 PLACES
BRAZE SEE NOTE 4
10°57' REF
BRAZE SEE NOTE 4
TWO SLOTS IN ITEM ④ SPACED 180° APART
R 2 PLACES
SECTION C-C TYP 4 PLACES
A
4.50
10.00
.060
D
D
BRAZE 4 PLACES SEE NOTE 4
BRAZE 4 PLACES SEE NOTE 4
2 REQD ①
6.27
6.27
BRAZE SEE NOTE 4
.62
SECTION E-E
40°-55° 4 PLACES
-B-
TOOLING BOSS PERMISSIBLE
.875 .873 DIA
2.00
.968
⑧ 4 REQD .043 DIA .32 DEEP 7/0 TAPER REAM TO .059-.057 DIA IN ASSEMBLY THRU ITEMS [illegible] CUT OFF PINS [illegible] FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
1.000 .998 DIA
③
SECTION D-D 3 PLACES

6899981 B

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61688		7 FEB 66	CP
B		INITIAL RELEASE CLASS A PER TDRR			
C		REVISED PER TDRR 27900		18 APR 66	EF


9.265 REF
BRAZE
SEE NOTE 4
TWO SLOTS IN ITEM ④
SPACED 180° APART
SECTION C-C
TYP 4 PLACES
.38
.19
R 2 PLACES
.20
.10
DETAIL OF SLOT
A
BRAZE 4 PLACES
SEE NOTE 4
②
BRAZE 4 PLACES
SEE NOTE 4
③ 3 REQD
.883-.885 HOLE THRU TOP HALF
1.008-1.010 HOLE THRU BOTTOM HALF
AS SHOWN-3 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
BRAZE 8 PLACES
SEE NOTE 4
⑦ 8 REQD
④ 4 REQD
.18 R CUTOUT
2 REQD
3 PLACES
1.00
1.00
BRAZE
SEE NOTE 4
BRAZE 3 PLACES
SEE NOTE 4
2.18
2.18
47°-55° 4 PLACES
-B-
.375
.373 DIA
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
1.000
.998 DIA
SECTION D-D
3 PLACES
TAPER .250 INCH PER FOOT
.0638
.0618 DIA.
.56
DETAIL OF ITEM 8
SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪
SCALE 2:1

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2B	11	1	6899981-004	BOSS - GROUND LUG
	10	2	6899986	SUPPORT, IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	3	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899979	6899976-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN LEWANDOWSKI DATE 21 DEC 65
CHECKED KERN 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY,
BRAZED).

SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

6899981 C

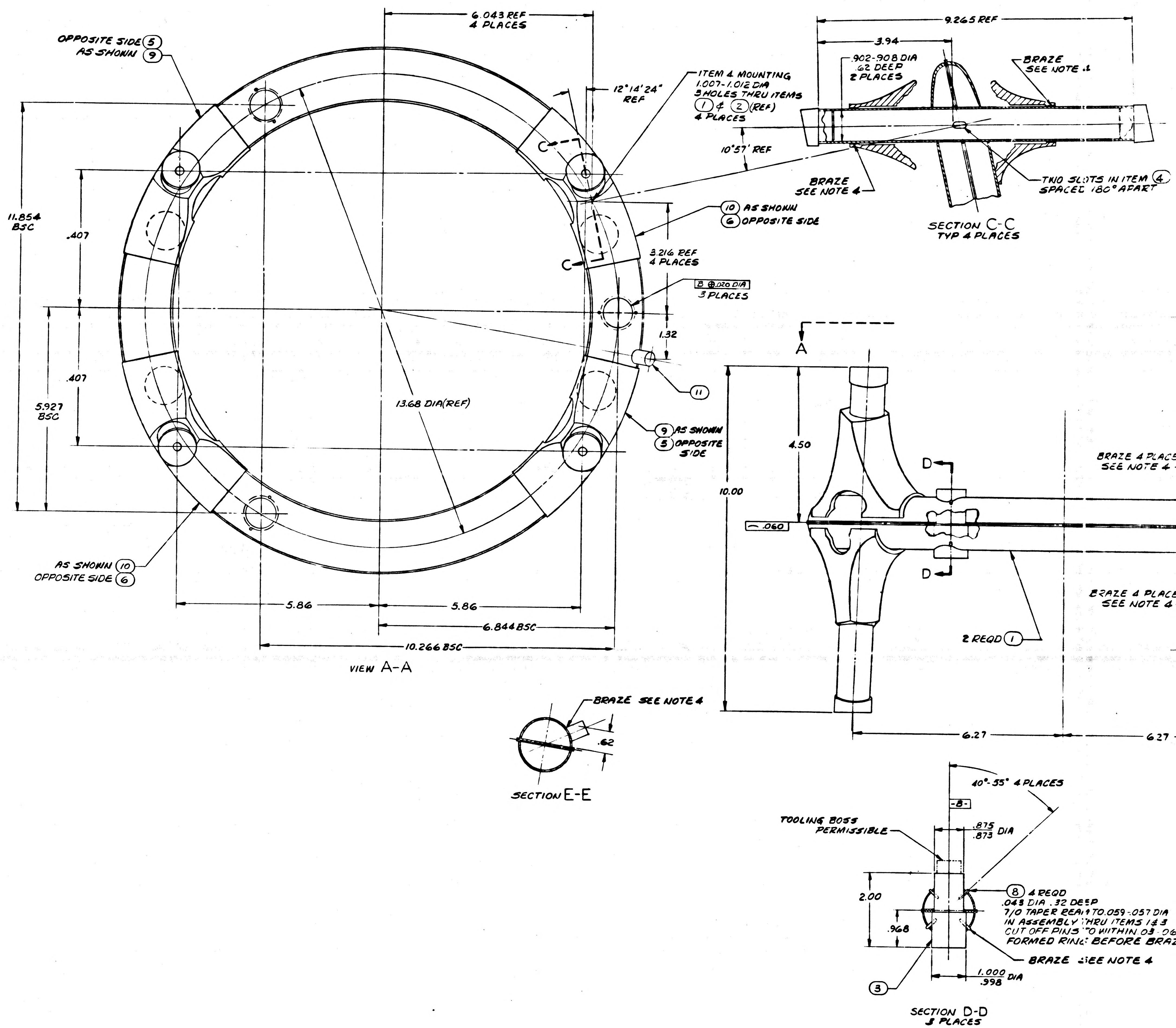
24

2 / 6899981

6899981

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 O.D × .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$.
4. DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND 1002073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6: ES2021)
   - A. SOLUTION HEAT TREAT AT 970°F ±10° FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ±5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND 1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.

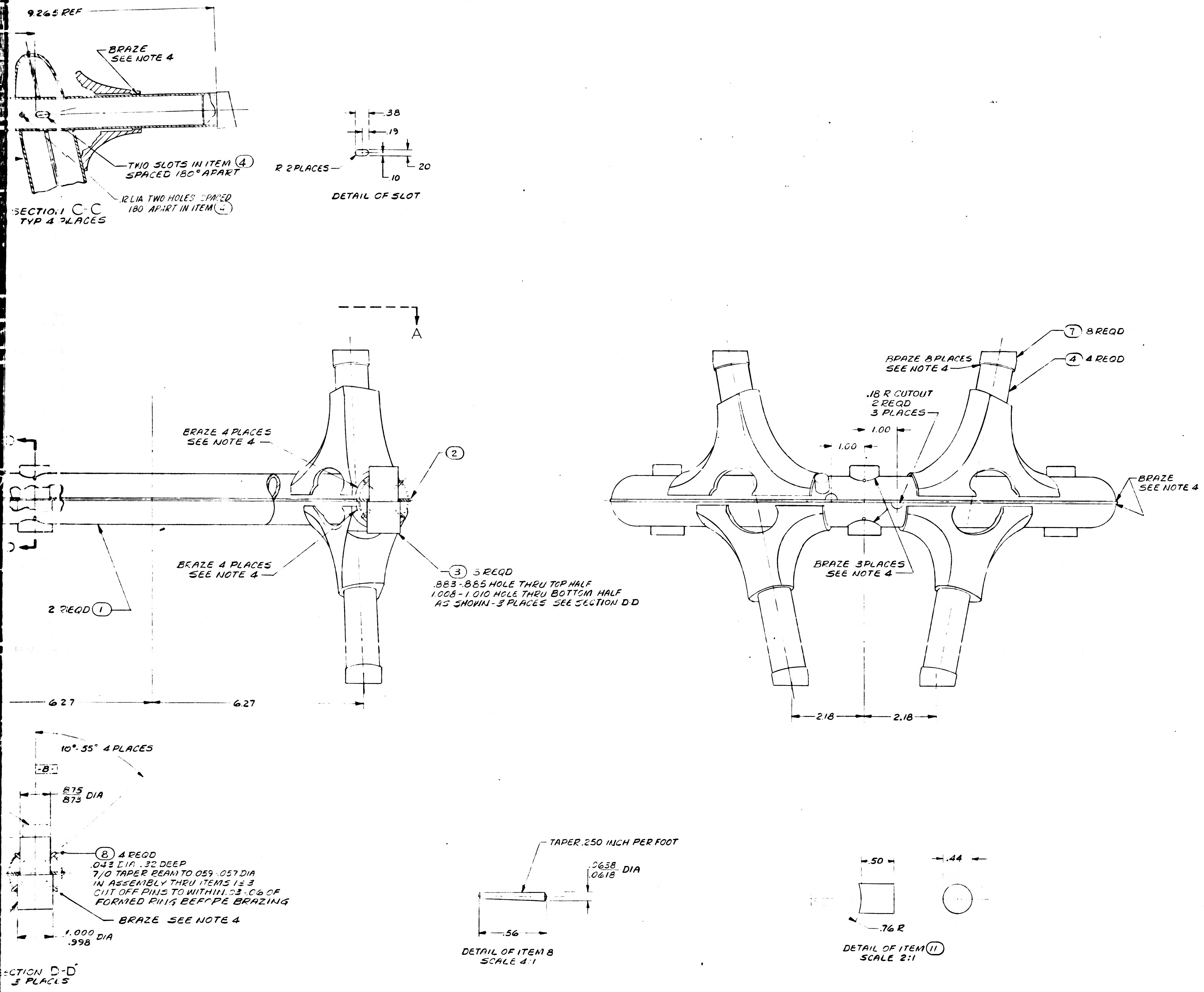

6.043 REF
4 PLACES
OPPOSITE SIDE ⑤
AS SHOWN ⑨
12°14'24" REF
ITEM 4 MOUNTING
1.007-1.012 DIA
3 HOLES THRU ITEMS
① & ② (REF)
4 PLACES
10°57' REF
C
C
11.854 BSC
.407
.407
5.927 BSC
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF
4 PLACES
B ⊕ .020 DIA
3 PLACES
1.32
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
AS SHOWN ⑩
OPPOSITE SIDE ⑥
5.86
5.86
6.844 BSC
10.266 BSC
VIEW A-A
9.265 REF
3.94
.902-.908 DIA
.62 DEEP
2 PLACES
BRAZE
SEE NOTE 4
BRAZE
SEE NOTE 4
TWO SLOTS IN ITEM ④
SPACED 180° APART
SECTION C-C
TYP 4 PLACES
A
4.50
10.00
.060
D
D
BRAZE 4 PLACES
SEE NOTE 4
BRAZE 4 PLACES
SEE NOTE 4
2 REQD ①
6.27
6.27
BRAZE SEE NOTE 4
.62
SECTION E-E
40°-55° 4 PLACES
-B-
TOOLING BOSS
PERMISSIBLE
.875/.873 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06
FORMED RING BEFORE BRAZ
BRAZE SEE NOTE 4
1.000/.998 DIA
③
SECTION D-D
3 PLACES

2H

6899981 C

1/6899981

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61688		7 FEB 66	CP
B		INITIAL RELEASE CLASS A PER TDRR		12 FEB 66	DKD DKD
C		REVISED PER TDRR 27900		18 APR 66	JW
D		REVISED PER TDRR 28376		9 MAY 66	JK AU


9.265 REF
BRAZE SEE NOTE 4
TWO SLOTS IN ITEM ④ SPACED 180° APART
.12 DIA TWO HOLES SPACED 180 APART IN ITEM ④
SECTION C-C TYP 4 PLACES
.38
.19
R 2 PLACES
.10
.20
DETAIL OF SLOT
A
BRAZE 4 PLACES SEE NOTE 4
②
BRAZE 4 PLACES SEE NOTE 4
③ 3 REQD
.883-.885 HOLE THRU TOP HALF
1.008-1.010 HOLE THRU BOTTOM HALF AS SHOWN-3 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES SEE NOTE 4
.18 R CUTOUT 2 REQD 3 PLACES
1.00
1.00
BRAZE SEE NOTE 4
BRAZE 3 PLACES SEE NOTE 4
2.18
2.18
10°-55' 4 PLACES
.875 / .873 DIA
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
1.000 / .998 DIA
SECTION D-D 3 PLACES
TAPER .250 INCH PER FOOT
.0638 / .0618 DIA
.56
DETAIL OF ITEM 8 SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪ SCALE 2:1

	ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2B	11	1	6899981-004	BOSS - GROUND LUG
	10	2	6899986	SUPPORT IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	3	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

NEXT ASSY | USED ON
APPLICATION

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN LEWANDOWSKI DATE 21 DEC 65
CHECKED KERN 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY, BRAZED).

SIZE J
CODE IDENT NO 80230
6899981
SCALE 1:1
SHEET 1 OF 1

6899981 D

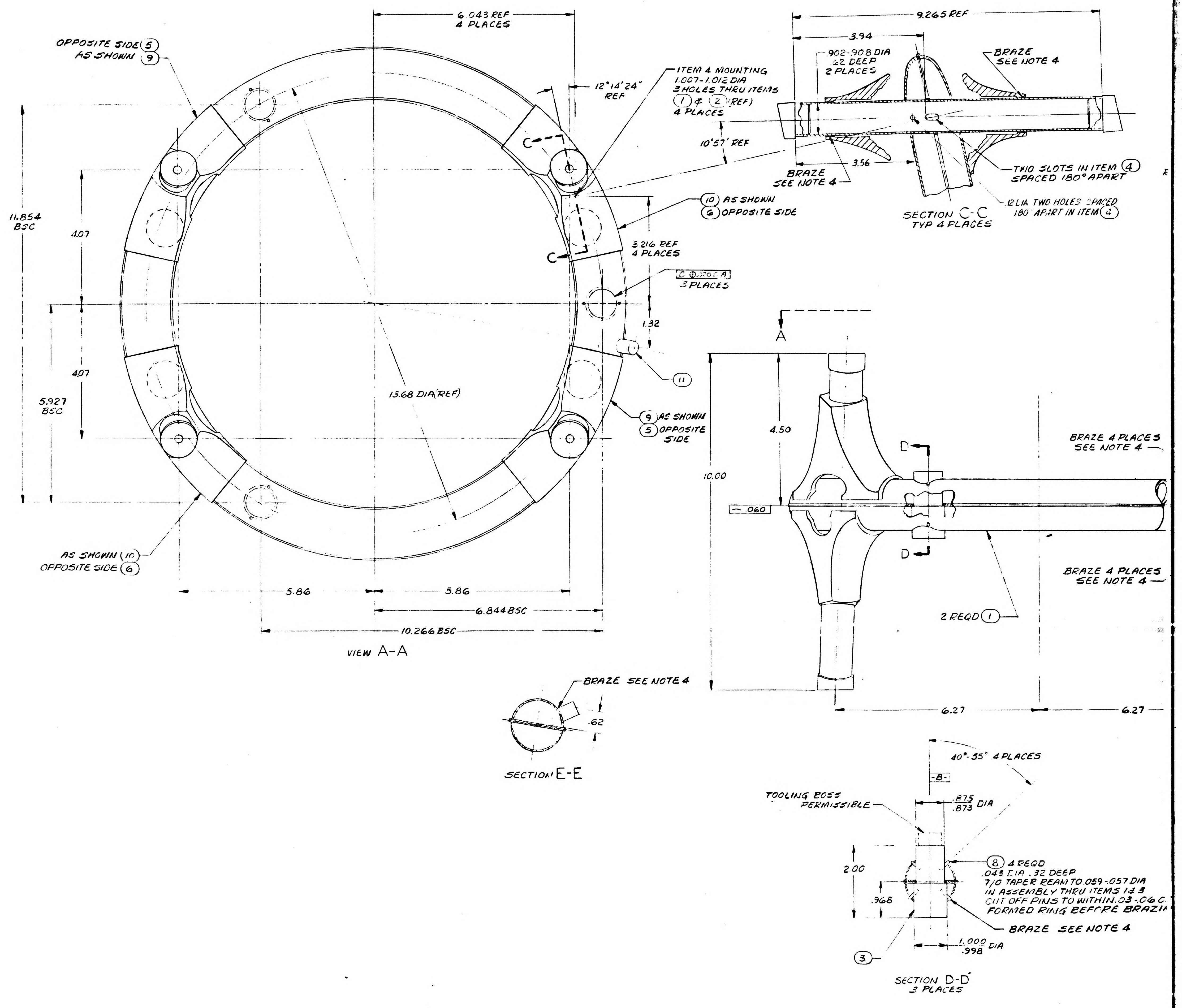
6899981

24

27 6899981

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 O.D x .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED 125√.
4. DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND 1002073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6 ES2021)
   - A. SOLUTION HEAT TREAT AT 970°F ±10° FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ±5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND 1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.

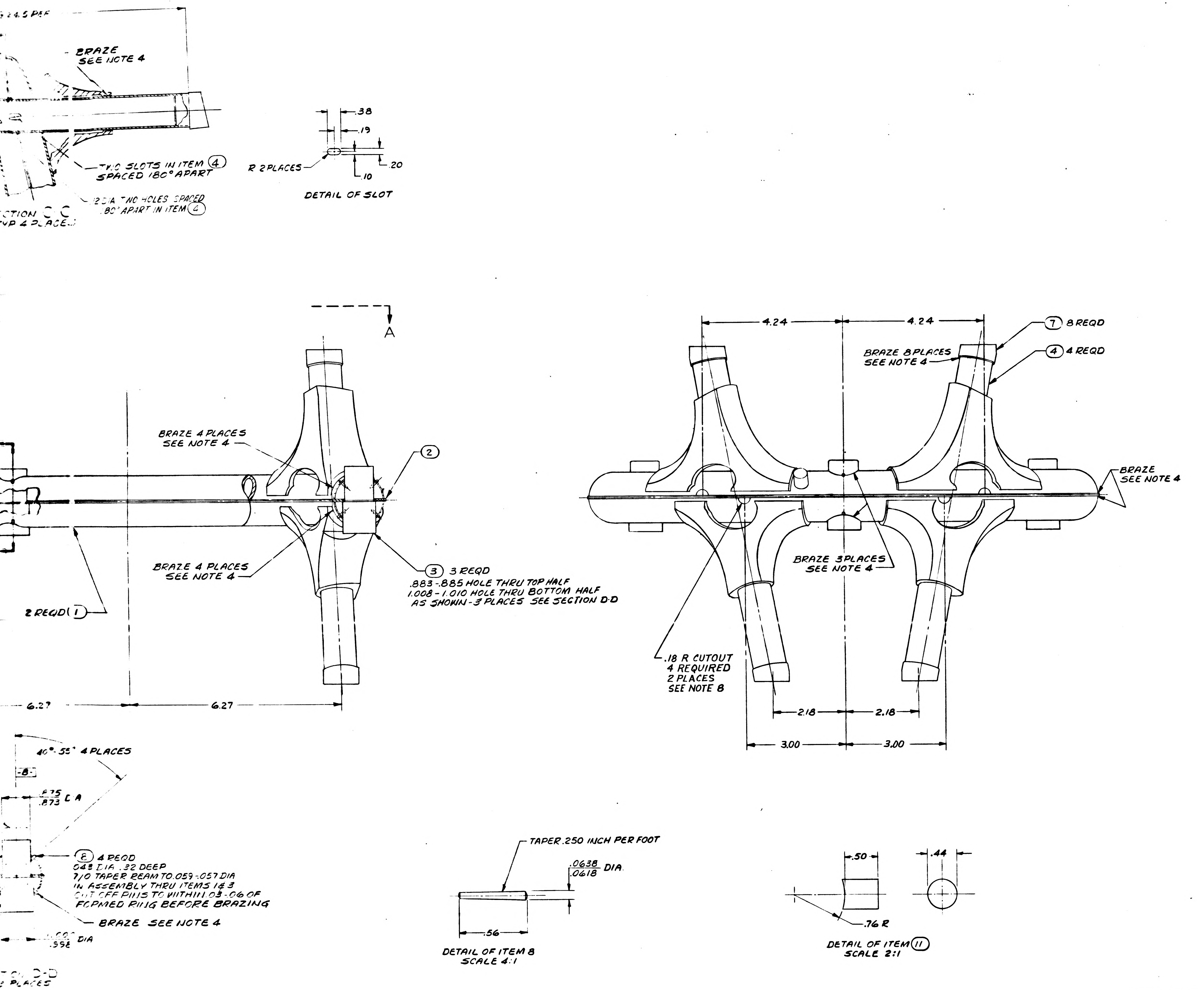


OPPOSITE SIDE ⑤
AS SHOWN ⑨
6.043 REF
4 PLACES
12°14'24" REF
ITEM 4 MOUNTING
1.007-1.012 DIA
3 HOLES THRU ITEMS ① & ② (REF)
4 PLACES
10°57' REF
C
C
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF
4 PLACES
3 PLACES
11.854 BSC
4.07
4.07
5.927 BSC
1.32
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
AS SHOWN ⑩
OPPOSITE SIDE ⑥
5.86
5.86
6.844 BSC
10.266 BSC
VIEW A-A
9.265 REF
3.94
.902-.908 DIA
.62 DEEP
2 PLACES
BRAZE
SEE NOTE 4
3.56
BRAZE
SEE NOTE 4
TWO SLOTS IN ITEM ④
SPACED 180° APART
.12 DIA TWO HOLES SPACED
180° APART IN ITEM ④
SECTION C-C
TYP 4 PLACES
A
4.50
10.00
.060
D
D
BRAZE 4 PLACES
SEE NOTE 4
BRAZE 4 PLACES
SEE NOTE 4
2 REQD ①
6.27
6.27
BRAZE SEE NOTE 4
.62
SECTION E-E
40°-55° 4 PLACES
-B-
TOOLING BOSS
PERMISSIBLE
.875/.873 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 O
FORMED RING BEFORE BRAZI
BRAZE SEE NOTE 4
1.000/.998 DIA
③
SECTION D-D
3 PLACES

6899981 D

176899981

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61688		7 FEB 66	CF
B		INITIAL RELEASE CLASS A PER TDRR		12 FEB 66	DKD
C		REVISED PER TDRR 27900		18 APR 66	
D		REVISED PER TDRR 28376		9 MAY 66	
E		REVISED PER TDRR 28597		16 MAY 66	DKD


BRAZE
SEE NOTE 4
TWO SLOTS IN ITEM ④ SPACED 180° APART
.12 DIA TWO HOLES SPACED 180° APART IN ITEM ④
SECTION C-C
TYP 4 PLACES
.38
.19
.20
.10
R 2 PLACES
DETAIL OF SLOT
A
BRAZE 4 PLACES
SEE NOTE 4
②
BRAZE 4 PLACES
SEE NOTE 4
③ 3 REQD
.883-.885 HOLE THRU TOP HALF
1.008-1.010 HOLE THRU BOTTOM HALF
AS SHOWN-3 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
4.24
4.24
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES
SEE NOTE 4
BRAZE
SEE NOTE 4
BRAZE 3 PLACES
SEE NOTE 4
.18 R CUTOUT
4 REQUIRED
2 PLACES
SEE NOTE 8
2.18
2.18
3.00
3.00
40°-55° 4 PLACES
-B-
.875
.873 DIA
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
.598 DIA
SECTION D-D
PLACES
TAPER .250 INCH PER FOOT
.0638
.0618 DIA.
.56
DETAIL OF ITEM 8
SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪
SCALE 2:1

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2B	11	1	6899981-004	BOSS-GROUND LUG
	10	2	6899986	SUPPORT IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	3	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899979	6899978-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN LEWANDOWSKI DATE 21 DEC 65
CHECKED KEAN 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY,
BRAZED).

SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

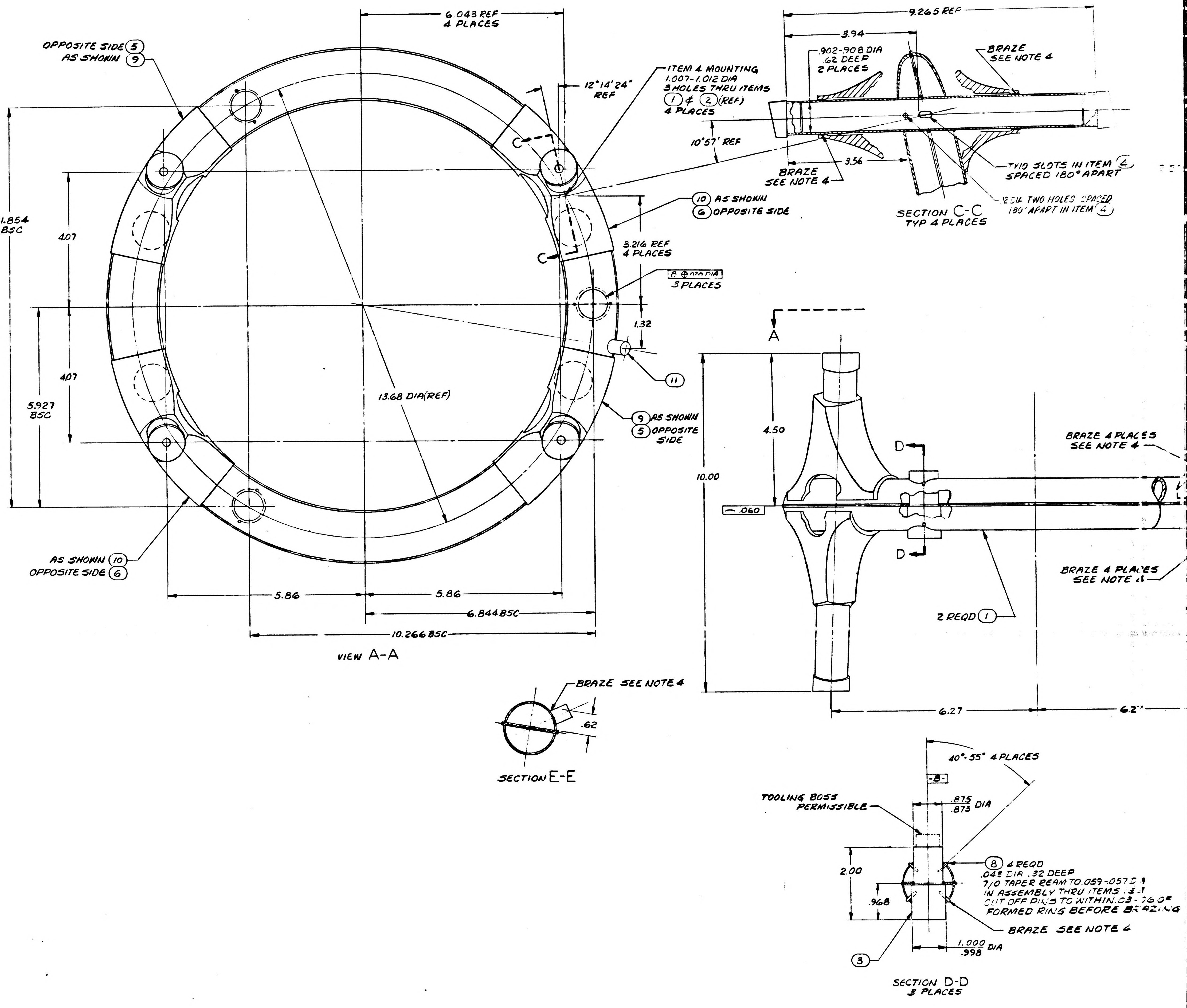
6899981 E

2/6899981

24

NOTES:

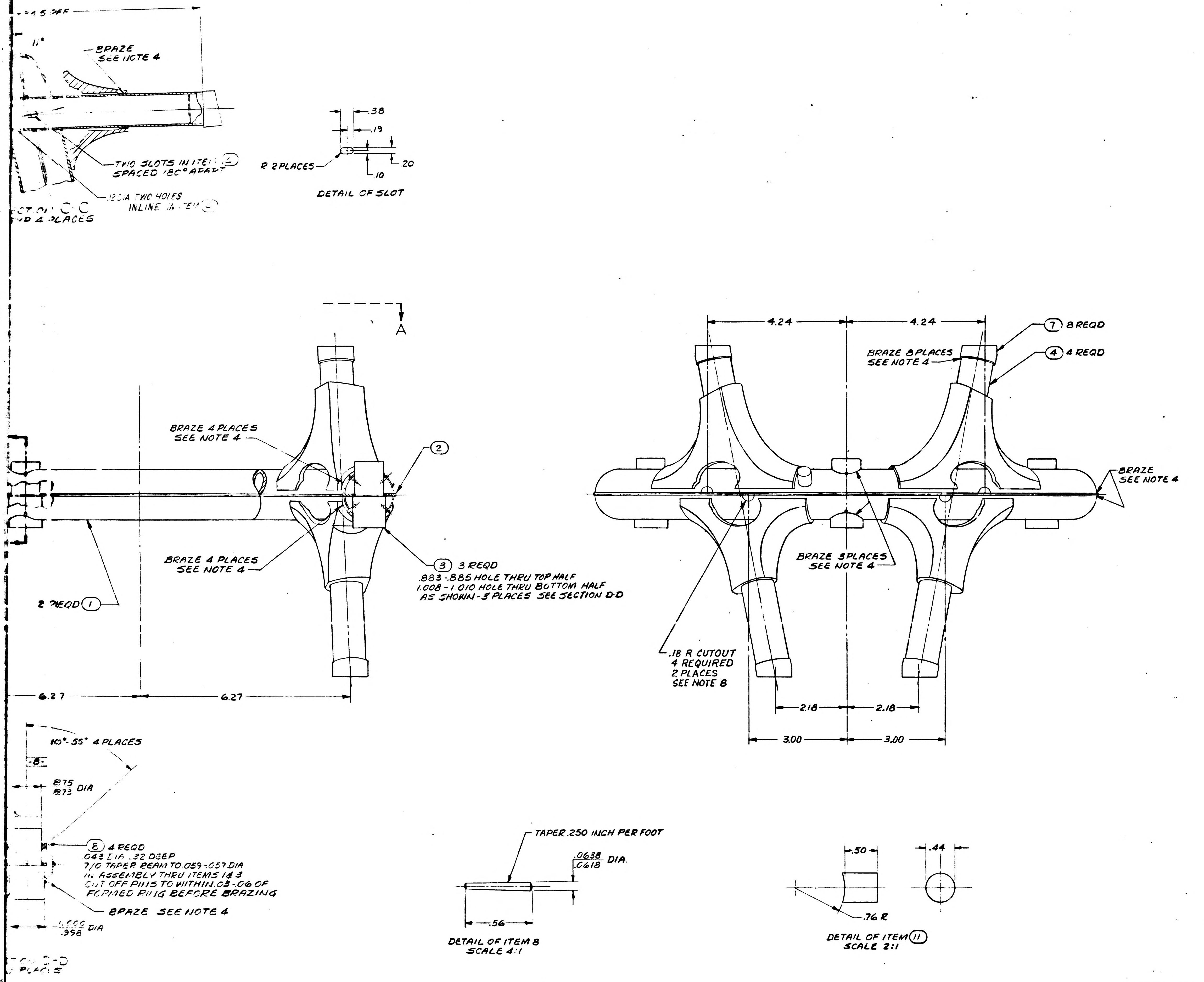
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 O.D × .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.
4. DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND 1CC2C73 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6: ES2C21)
   - A. SOLUTION HEAT TREAT AT 970°F ±10°F FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ±5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND 1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.
8. FOUR CUTOUTS NOT SHOWN TO BE LOCATED 180° FROM INDICATED POSITION.


OPPOSITE SIDE ⑤
AS SHOWN ⑨
6.043 REF
4 PLACES
12°14'24" REF
ITEM 4 MOUNTING
1.007-1.012 DIA
3 HOLES THRU ITEMS ① & ② (REF)
4 PLACES
10°57' REF
C
C
11.854 BSC
4.07
4.07
5.927 BSC
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF
4 PLACES
B ⊕ .020 DIA
3 PLACES
1.32
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
AS SHOWN ⑩
OPPOSITE SIDE ⑥
5.86
5.86
6.844 BSC
10.266 BSC
VIEW A-A
9.265 REF
3.94
.902-.908 DIA
.62 DEEP
2 PLACES
BRAZE
SEE NOTE 4
BRAZE
SEE NOTE 4
3.56
TWO SLOTS IN ITEM ④
SPACED 180° APART
.12 DIA TWO HOLES SPACED
180° APART IN ITEM ④
SECTION C-C
TYP 4 PLACES
A
4.50
10.00
⌒ .060
D
D
BRAZE 4 PLACES
SEE NOTE 4
BRAZE 4 PLACES
SEE NOTE 4
2 REQD ①
6.27
6.2
BRAZE SEE NOTE 4
.62
SECTION E-E
40°-55° 4 PLACES
-B-
TOOLING BOSS
PERMISSIBLE
.875/.873 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
1.000/.998 DIA
③
SECTION D-D
3 PLACES

6899981 E

1/6899981

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61688		[illegible]	CF
B		INITIAL RELEASE CLASS A PER TDRR		[illegible]	[illegible]
C		REVISED PER TDRR 27900		[illegible]	[illegible]
D		REVISED PER TDRR 28376		[illegible]	[illegible]
E		REVISED PER TDRR 28597		[illegible]	[illegible]
F		REVISED PER TDRR-29203		[illegible]	FC



BRAZE SEE NOTE 4
TWO SLOTS IN ITEM ②
SPACED 180° APART
.125 DIA TWO HOLES INLINE IN ITEM ②
SECTION C-C
2 PLACES
.38
.19
R 2 PLACES
.20
.10
DETAIL OF SLOT
A
BRAZE 4 PLACES SEE NOTE 4
②
BRAZE 4 PLACES SEE NOTE 4
③ 3 REQD
.883-.885 HOLE THRU TOP HALF
1.008-1.010 HOLE THRU BOTTOM HALF
AS SHOWN-3 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
4.24
4.24
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES SEE NOTE 4
BRAZE SEE NOTE 4
BRAZE 3 PLACES SEE NOTE 4
.18 R CUTOUT
4 REQUIRED
2 PLACES
SEE NOTE 8
2.18
2.18
3.00
3.00
40°-55° 4 PLACES
.875
.873 DIA
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
1.000
.998 DIA
SECTION D-D
2 PLACES
TAPER .250 INCH PER FOOT
.0638
.0618 DIA.
.56
DETAIL OF ITEM 8
SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪
SCALE 2:1

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2B	11	1	6899981-004	BOSS-GROUND LUG
	10	2	6899986	SUPPORT IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	3	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN LEWANDOWSKI DATE 21 DEC 65
CHECKED KERN 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL A. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY,
BRAZED).

SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

NEXT ASSY	USED ON
6899979	6899978-011

APPLICATION

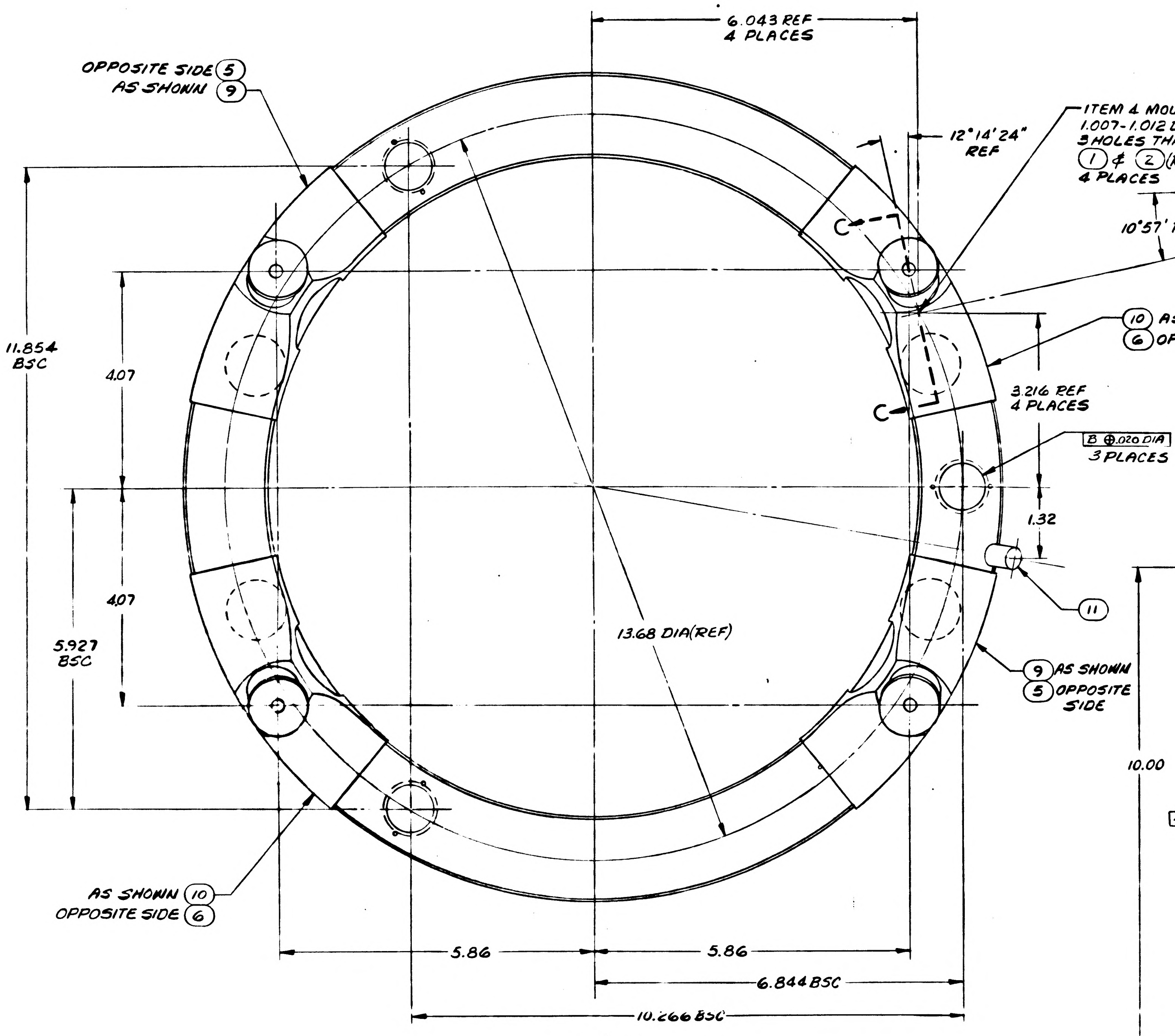
6899981 F

24

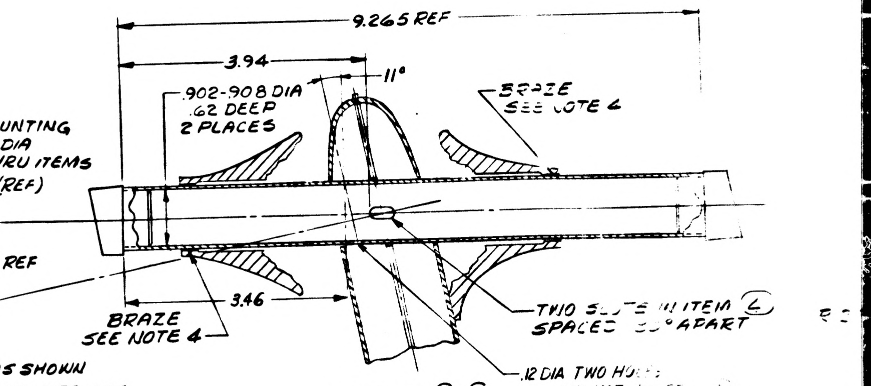
2/6899981

NOTES:

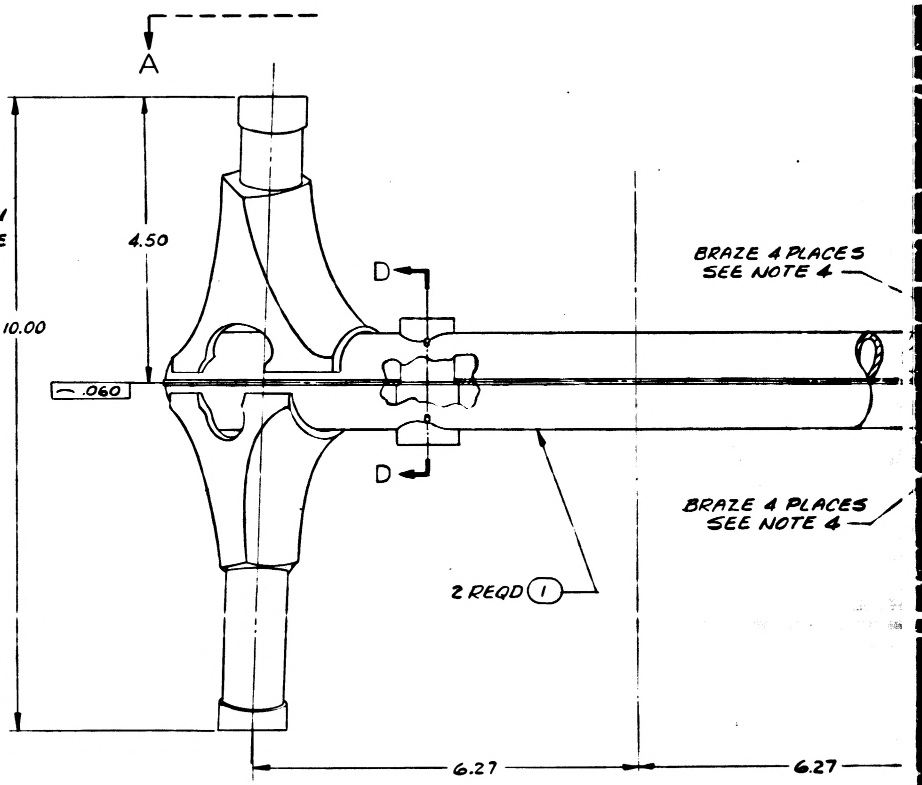
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 O.D × .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.
4. DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND ICC2073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6: ES2021)
   - A. SOLUTION HEAT TREAT AT 970°F ± 10°F FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ± 5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND 1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.
8. FOUR CUTOUTS NOT SHOWN TO BE LOCATED 180° FROM INDICATED POSITION.

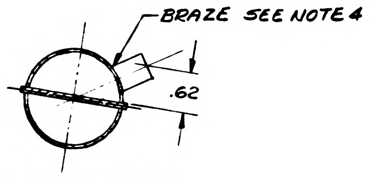

OPPOSITE SIDE ⑤
AS SHOWN ⑨
6.043 REF
4 PLACES
12°14'24" REF
ITEM 4 MOUNTING
1.007-1.012 DIA
3 HOLES THRU ITEMS
① & ② (REF)
4 PLACES
C
C
11.854 BSC
4.07
4.07
5.927 BSC
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF
4 PLACES
B ⊕.020 DIA
3 PLACES
1.32
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
AS SHOWN ⑩
OPPOSITE SIDE ⑥
5.86
5.86
6.844 BSC
10.266 BSC

VIEW A-A

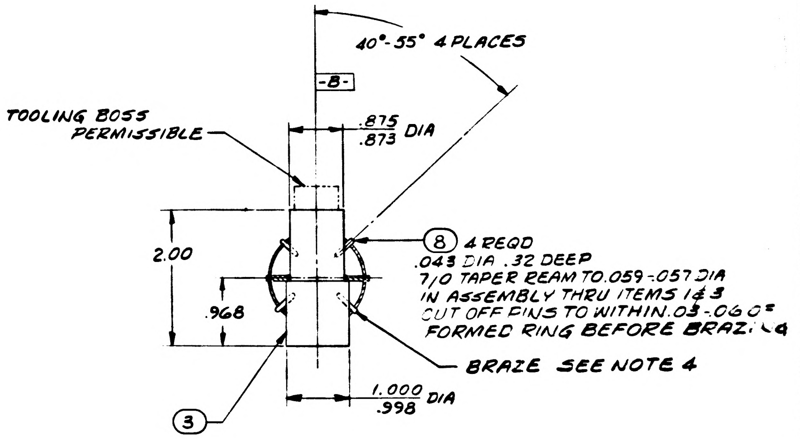

9.265 REF
3.94
.902-.908 DIA
.62 DEEP
2 PLACES
11°
BRAZE
SEE NOTE 4
10°57' REF
3.46
BRAZE
SEE NOTE 4
TWO SLOTS IN ITEM ②
SPACED 30° APART
.12 DIA TWO HOLES
INLINE IN ITEM ②

SECTION C-C
TYP 4 PLACES


A
4.50
10.00
.060
D
D
BRAZE 4 PLACES
SEE NOTE 4
BRAZE 4 PLACES
SEE NOTE 4
2 REQD ①
6.27
6.27

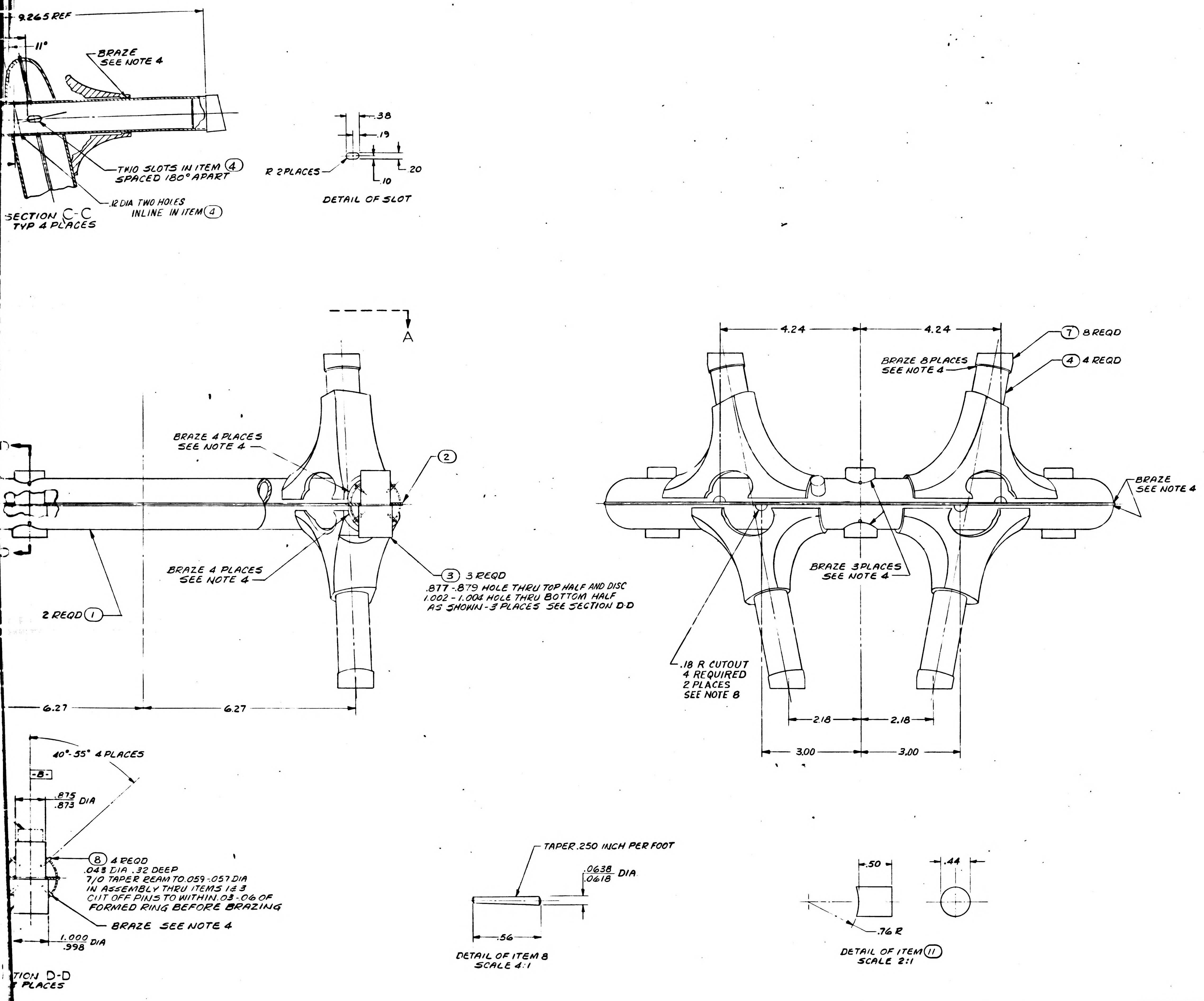

BRAZE SEE NOTE 4
.62

SECTION E-E


40°-55° 4 PLACES
-B-
TOOLING BOSS
PERMISSIBLE
.875
.873 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.060 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
1.000
.998 DIA
③

SECTION D-D
3 PLACES

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61608		7 FEB 66	CP
B		INITIAL RELEASE CLASS A PER TDRR		12 FEB 66	DKD DKD
C		REVISED PER TDRR 27900		18 APR 66	JW EF
D		REVISED PER TDRR 28376		9 MAY 66	JK AU
E		REVISED PER TDRR 28591		16 MAY 66	DKD
F		REVISED PER TDRR-29203		7-JUN-66	B. JAC
G		REVISED PER TDRR-30331		3 AUG 66	JJB RLW


9.265 REF
11°
BRAZE SEE NOTE 4
TWO SLOTS IN ITEM ④ SPACED 180° APART
.12 DIA TWO HOLES INLINE IN ITEM ④
SECTION C-C TYP 4 PLACES
.38
.19
R 2 PLACES
.10
.20
DETAIL OF SLOT
A
BRAZE 4 PLACES SEE NOTE 4
②
BRAZE 4 PLACES SEE NOTE 4
③ 3 REQD
.877-.879 HOLE THRU TOP HALF AND DISC
1.002-1.004 HOLE THRU BOTTOM HALF AS SHOWN-3 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
4.24
4.24
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES SEE NOTE 4
BRAZE SEE NOTE 4
BRAZE 3 PLACES SEE NOTE 4
.18 R CUTOUT 4 REQUIRED 2 PLACES SEE NOTE 8
2.18
2.18
3.00
3.00
40°-55° 4 PLACES
-B-
.875/.873 DIA
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 4
1.000/.998 DIA
TION D-D
PLACES
TAPER .250 INCH PER FOOT
.0638/.0618 DIA
.56
DETAIL OF ITEM 8 SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪ SCALE 2:1

24

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2B	11	1	6899981-004	BOSS-GROUND LUG
	10	2	6899986	SUPPORT, IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	3	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

NEXT ASSY	6899979
USED ON	6899978-011
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL: SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN LEWANDOWSKI DATE 21 DEC 65
CHECKED KERN 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

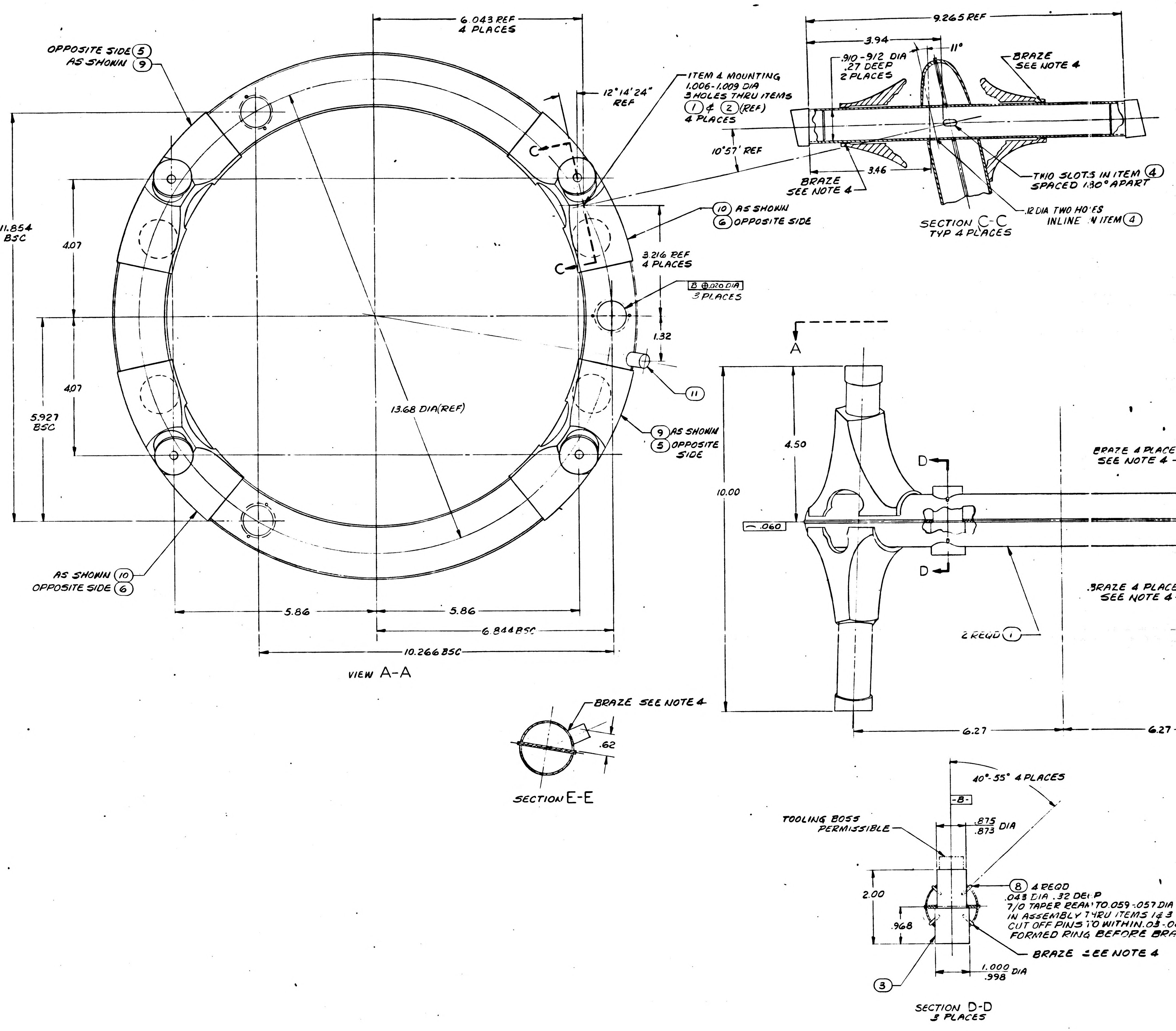
BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY, BRAZED).

SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

6899981 G

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 O.D × .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt[125]{}$.
4. DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND 1002073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6: ES 2021)
   - A. SOLUTION HEAT TREAT AT 970°F ± 10°F FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ± 5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND 1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.
8. FOUR CUTOUTS NOT SHOWN TO BE LOCATED 180° FROM INDICATED POSITION.



OPPOSITE SIDE ⑤
AS SHOWN ⑨
6.043 REF
4 PLACES
12°14'24" REF
ITEM 4 MOUNTING
1.006-1.009 DIA
3 HOLES THRU ITEMS
① & ② (REF)
4 PLACES
10°57' REF
C
C
11.854 BSC
4.07
4.07
5.927 BSC
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF
4 PLACES
B ⊕ .020 DIA
3 PLACES
1.32
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
AS SHOWN ⑩
OPPOSITE SIDE ⑥
5.86
5.86
6.844 BSC
10.266 BSC
VIEW A-A
9.265 REF
3.94
11°
.910-.912 DIA
.27 DEEP
2 PLACES
BRAZE
SEE NOTE 4
BRAZE
SEE NOTE 4
3.46
TWO SLOTS IN ITEM ④
SPACED 180° APART
.12 DIA TWO HOLES
INLINE IN ITEM ④
SECTION C-C
TYP 4 PLACES
A
A
4.50
10.00
⌒ .060
D
D
BRAZE 4 PLACES
SEE NOTE 4
BRAZE 4 PLACES
SEE NOTE 4
2 REQD ①
6.27
6.27
BRAZE SEE NOTE 4
.62
SECTION E-E
40°-55° 4 PLACES
-B-
TOOLING BOSS
PERMISSIBLE
.875
.873 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.0
FORMED RING BEFORE BRA
BRAZE SEE NOTE 4
1.000
.998 DIA
③
SECTION D-D
3 PLACES

6899981	G

1 / 6899981

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 O.D x .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED 125√.
4. ~~DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND1002073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING~~.
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6: ES2021)
   - A. SOLUTION HEAT TREAT AT 970°F ±10° FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ±5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.
8. FOUR CUTOUTS NOT SHOWN TO BE LOCATED 180° FROM INDICATED POSITION.
9. DIP BRAZE AND AIR COOL TO ROOM TEMP. (PRIOR TO CLEANING) PER ND1002073 WITH THE EXCEPTION OF THE VISUAL MECHANICAL AND RADIOGRAPHIC INSPECTION REQUIREMENTS. BRAZED JOINTS SHALL BE INSPECTED TO THE FOLLOWING REQUIREMENTS: FAILURE TO MEET THESE REQUIREMENTS SHALL BE CAUSE FOR REJECTION.

   A. VISUAL MECHANICAL

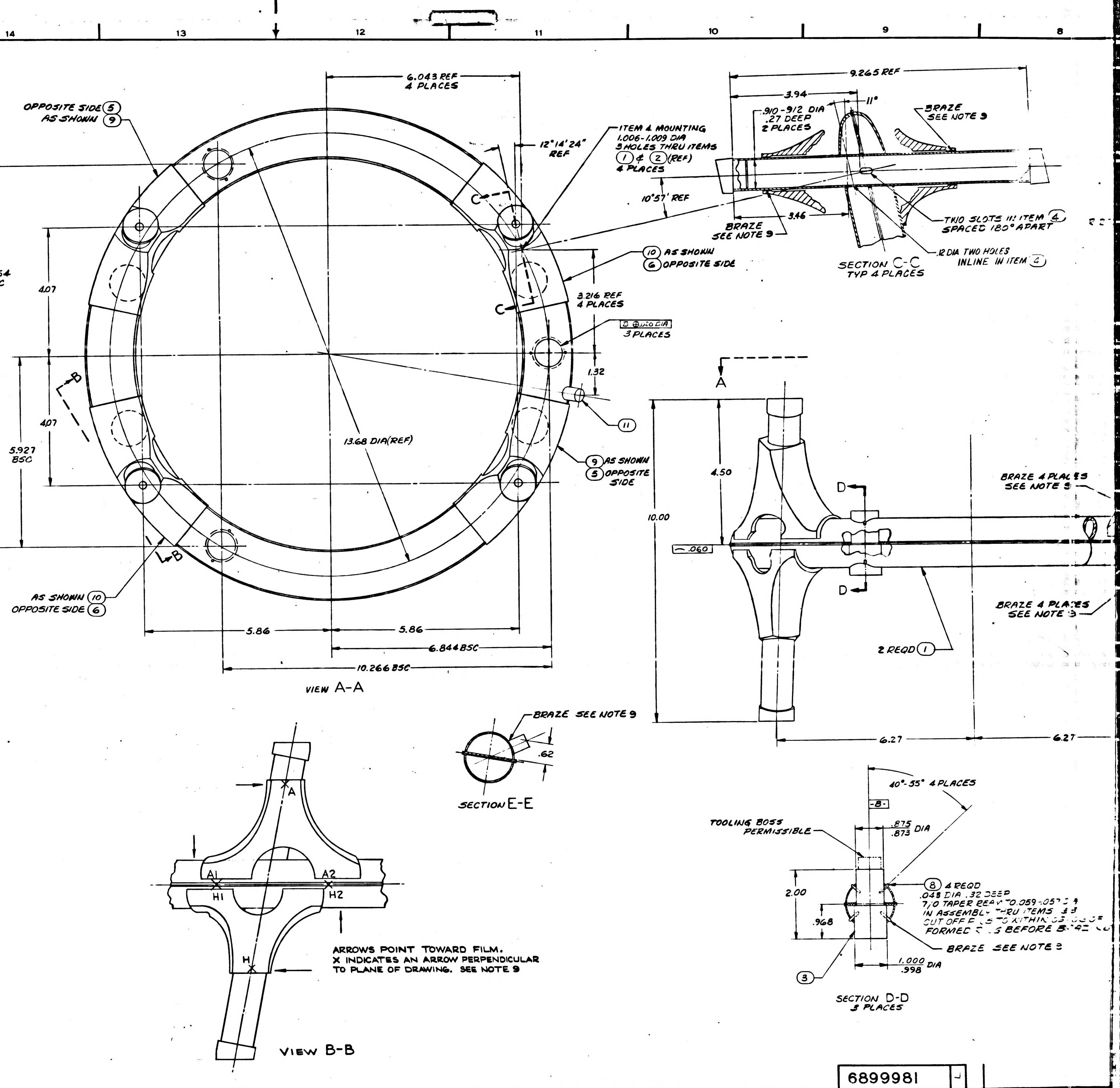
   EACH BRAZED JOINT SHALL BE VISUALLY INSPECTED. FILLER METAL SHALL BE PRESENT IN THE JOINT AREA ALONG ALL EXPOSED EDGES. FILLET RADII SHALL BE ANY DIMENSION GREATER THAN ZERO. JOINTS SHALL ALSO BE EXAMINED FOR THE FOLLOWING:

   - a. EVIDENCE OF MELTING PARENT METAL
   - b. FAILURE OF BRAZE FILLER METAL TO MELT.
   - c. EVIDENCE OF EXTERNAL POROSITY (PIN HOLES) IN WHICH:
     - 1. THE VOIDS ARE LARGER THAN .030 INCHES IN DIA.
     - 2. THE TOTAL NUMBER OF PIN HOLES OF MAXIMUM DIA. EXCEEDS FOUR PER INCH OF BRAZE LENGTH.
   - d. EVIDENCE OF CONCENTRATED SURFACE POROSITY IN WHICH:
     - 1. THE LARGEST POROUS AREA IS GREATER THAN 25 PERCENT OF THE AREA IN ONE LINEAR INCH OF BRAZE.
     - 2. THE LARGEST DIMENSION OF INTERCONNECTED POROSITY SHALL NOT EXCEED .030 INCHES IN DIA.

   B. RADIOGRAPHIC EXAMINATION:

   X-RAY PICTURES SHALL BE TAKEN OF EACH OF THE LEGS IN THE DIRECTION AND OF THE AREAS INDICATED IN VIEW B-B. THE RADIOGRAPHIC EXAMINATION SHALL BE CONDUCTED ACCORDING TO MIL-STD-453. THE X-RAYS SHALL INDICATE THAT THE TOTAL UNBRAZED AREA, INCLUDING TRAPPED FLUX, SCATTERED POROSITY AND VOIDS SHALL NOT EXCEED 30 PERCENT OF THE X-RAYED AREA. THE X-RAYED AREAS SHALL REPRESENT THE TOTAL BRAZED AREA OF A JOINT AS FOLLOWS:

JOINT	X-RAY COVERAGE
A	75%
A1	100%
A2	75%
H	75%
H1	75%
H2	100%

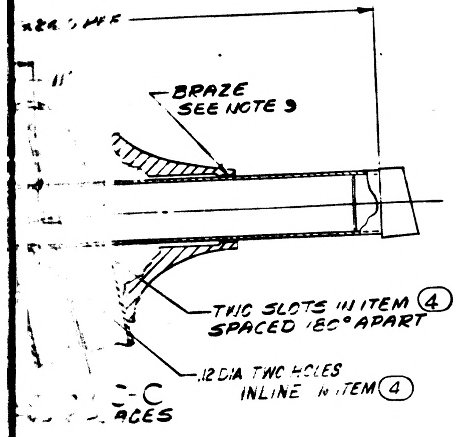


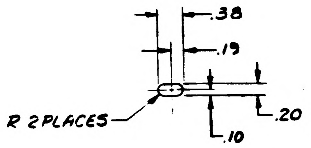
OPPOSITE SIDE ⑤
AS SHOWN ⑨
6.043 REF 4 PLACES
12°14'24" REF
ITEM 4 MOUNTING 1.006-1.009 DIA 3 HOLES THRU ITEMS ① & ② (REF) 4 PLACES
11.854 BSC
4.07
4.07
5.927 BSC
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF 4 PLACES
B ⊕ .020 DIA 3 PLACES
1.32
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
C
C
B
B
AS SHOWN ⑩
OPPOSITE SIDE ⑥
5.86
5.86
6.844 BSC
10.266 BSC
VIEW A-A
9.265 REF
3.94
11°
.910-.912 DIA .27 DEEP 2 PLACES
BRAZE SEE NOTE 9
10°57' REF
3.46
BRAZE SEE NOTE 9
TWO SLOTS IN ITEM ④ SPACED 180° APART
.12 DIA TWO HOLES INLINE IN ITEM ④
SECTION C-C TYP 4 PLACES
A
4.50
10.00
.060
D
D
BRAZE 4 PLACES SEE NOTE 9
BRAZE 4 PLACES SEE NOTE 9
2 REQD ①
6.27
6.27
BRAZE SEE NOTE 9
.62
SECTION E-E
A
A1
A2
H1
H2
H
ARROWS POINT TOWARD FILM.
X INDICATES AN ARROW PERPENDICULAR TO PLANE OF DRAWING. SEE NOTE 9
VIEW B-B
40°-55° 4 PLACES
-B-
TOOLING BOSS PERMISSIBLE
.875/.873 DIA
2.00
.968
⑧ 4 REQD .043 DIA .32 DEEP 7/0 TAPER REAM TO .059-.057 DIA IN ASSEMBLY THRU ITEMS ③ & ⑧ CUT OFF PINS TO WITHIN .03 OF FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 9
1.000/.998 DIA
③
SECTION D-D 3 PLACES

6899981

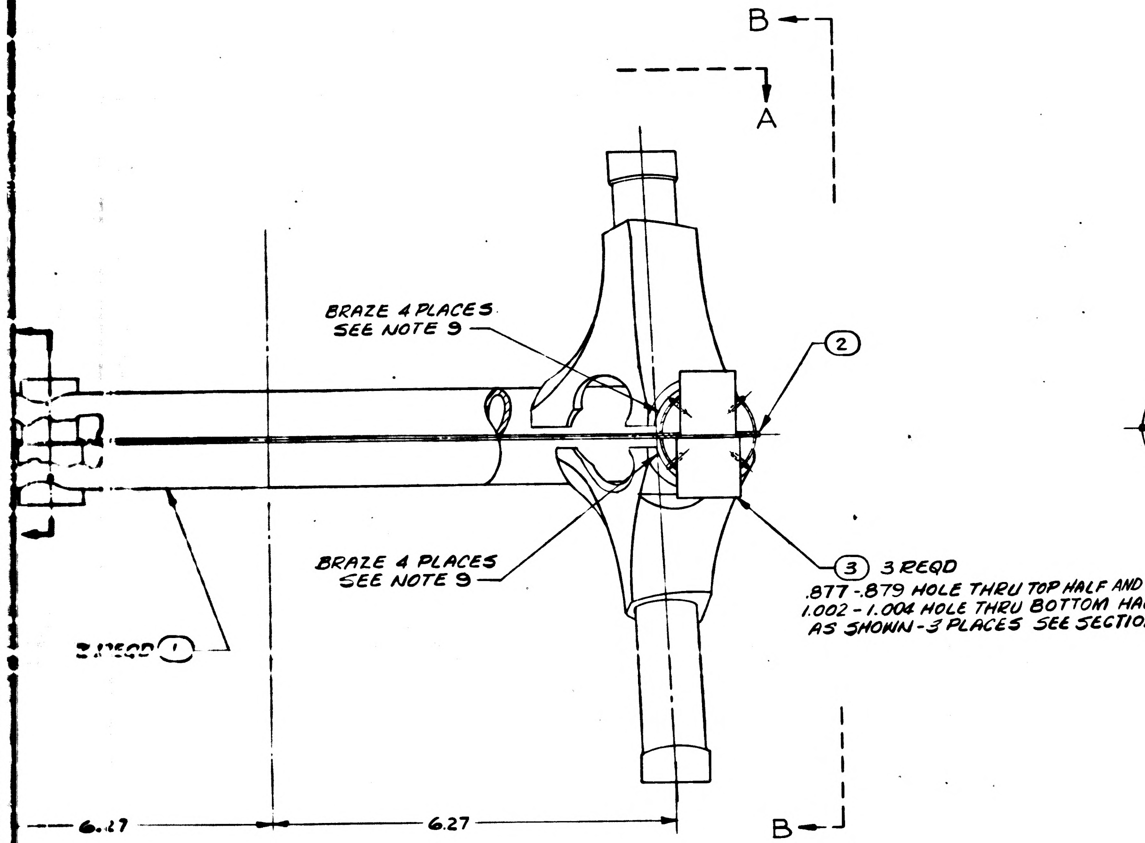
1/6899981

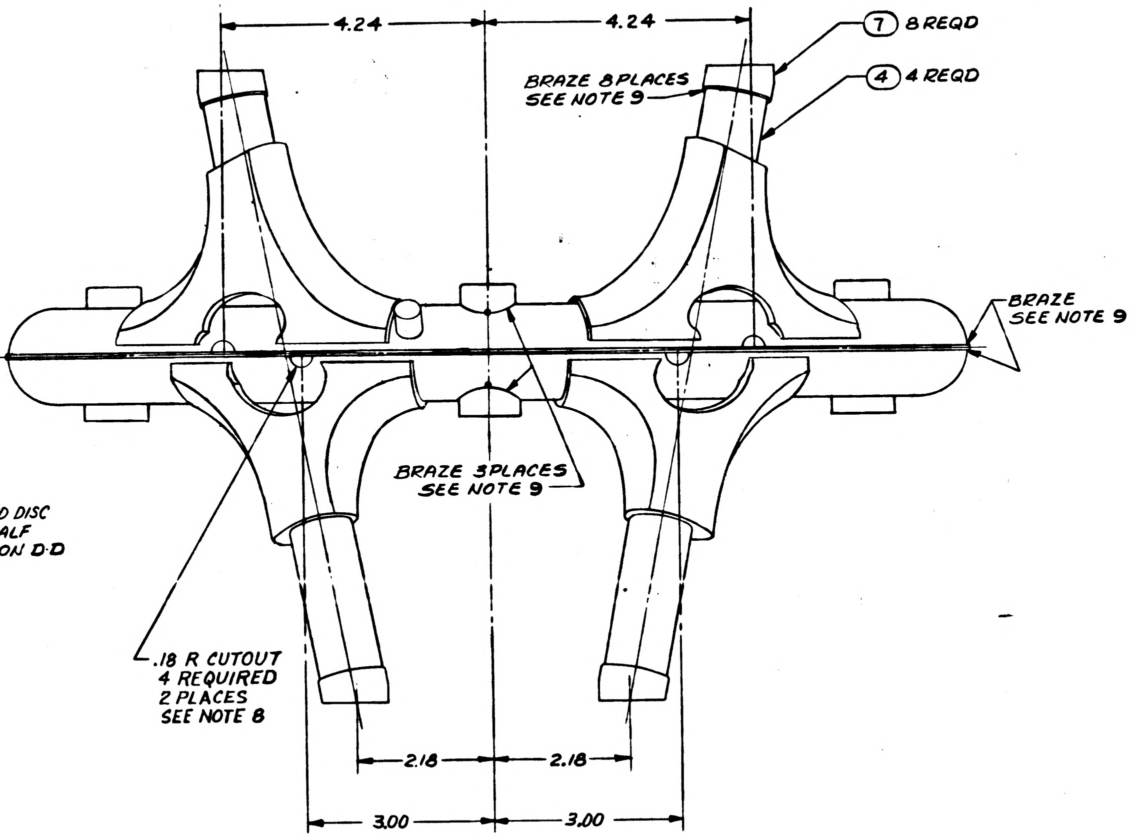
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61688		7 FEB 66	CP
B		INITIAL RELEASE CLASS A PER TDRR 27174		12 FEB 66	DKD DKD
C		REVISED PER TDRR 27900		18 APR 66	EJ
D		REVISED PER TDRR 28376		9 MAY 66	JK AU
E		REVISED PER TDRR 28597		16 MAY 66	DKD
F		REVISED PER TDRR-29203		7-JUN-66	B. JEC
G		REVISED PER TDRR-30331		3 AUG 66	JB
H		REVISED PER TDRR 30514		5 AUG 66	JT

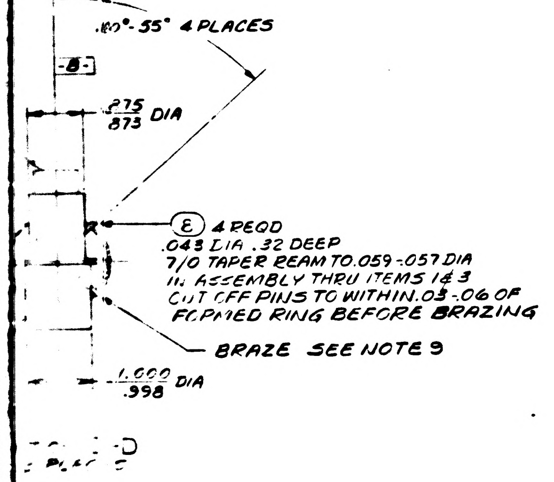

BRAZE
SEE NOTE 9
TWO SLOTS IN ITEM ④
SPACED 180° APART
.12 DIA TWO HOLES
INLINE IN ITEM ④
C-C
PLACES

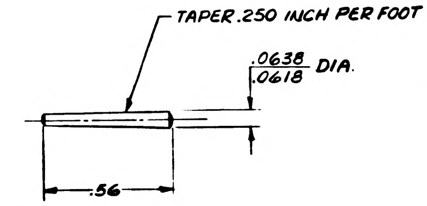

.38
.19
.20
.10
R 2 PLACES

DETAIL OF SLOT

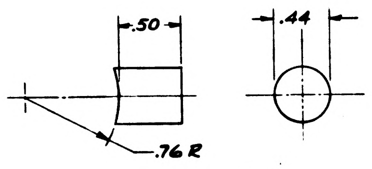

B
A
BRAZE 4 PLACES
SEE NOTE 9
②
BRAZE 4 PLACES
SEE NOTE 9
③ 3 REQD
.877-.879 HOLE THRU TOP HALF AND DISC
1.002-1.004 HOLE THRU BOTTOM HALF
AS SHOWN-3 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
B


4.24
4.24
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES
SEE NOTE 9
BRAZE
SEE NOTE 9
BRAZE 3 PLACES
SEE NOTE 9
.18 R CUTOUT
4 REQUIRED
2 PLACES
SEE NOTE 8
2.18
2.18
3.00
3.00


.60°-.55° 4 PLACES
-B-
.875
.873 DIA
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 9
1.000
.998 DIA
D-D
PLACES


TAPER .250 INCH PER FOOT
.0638
.0618 DIA.
.56

DETAIL OF ITEM 8
SCALE 4:1



DETAIL OF ITEM ⑪
SCALE 2:1

24

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2B	11	1	6899981-004	305S - GROUND LUG
	10	2	6899986	SUPPORT IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	3	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899979	6899978-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02
3 PLACE DECIMALS ±.005
ANGLES ±—
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

APPROVAL

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN LEWANDOWSKI DATE 21 DEC 65
CHECKED KERN 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY,
BRAZED).

SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

6899981 F

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 OD x .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED 125√.
4. ~~DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND1002073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.~~
5. HEAT TREAT AS FOLLOWS: (REF MIL-H-6088-T6: ES2021)
   - A. SOLUTION HEAT TREAT AT 970°F ± 10° FOR 2 HOURS.
   - B. AIR BLAST QUENCH TO ROOM TEMPERATURE.
   - C. AGE AT 350° ± 5° FOR 8 HOURS.
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF, IS OPTIONAL.
8. FOUR CUTOUTS NOT SHOWN TO BE LOCATED 180° FROM INDICATED POSITION.
9. DIP BRAZE AND AIR COOL TO ROOM TEMP. (PRIOR TO CLEANING) PER ND1002073 WITH THE EXCEPTION OF THE VISUAL MECHANICAL AND RADIOGRAPHIC INSPECTION REQUIREMENTS. BRAZED JOINTS SHALL BE INSPECTED TO THE FOLLOWING REQUIREMENTS: FAILURE TO MEET THESE REQUIREMENTS SHALL BE CAUSE FOR REJECTION.

   A. VISUAL MECHANICAL

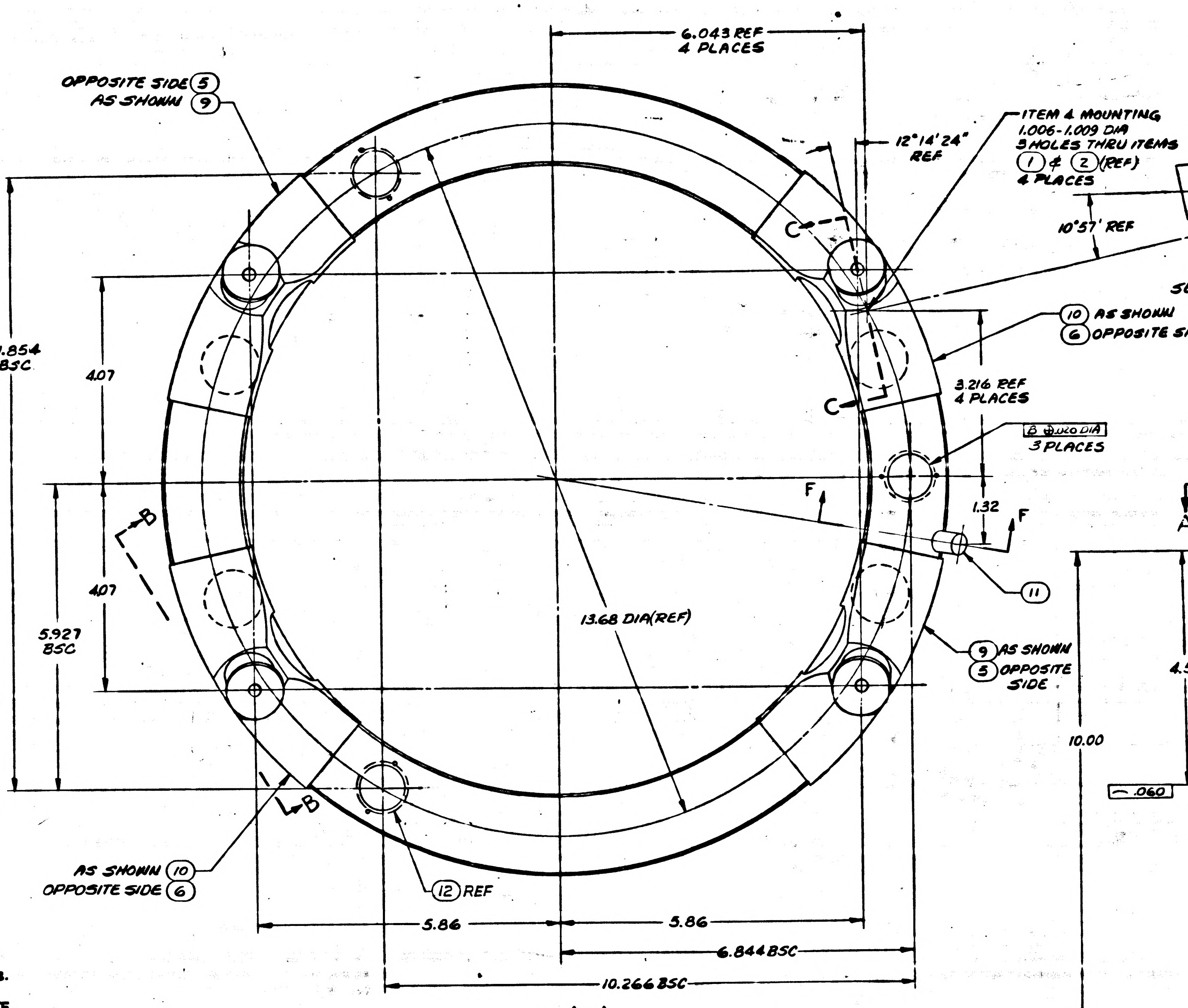
   EACH BRAZED JOINT SHALL BE VISUALLY INSPECTED. FILLER METAL SHALL BE PRESENT IN THE JOINT AREA ALONG ALL EXPOSED EDGES. FILLET RADII SHALL BE ANY DIMENSION GREATER THAN ZERO. JOINTS SHALL ALSO BE EXAMINED FOR THE FOLLOWING:

   - a. EVIDENCE OF MELTING PARENT METAL
   - b. FAILURE OF BRAZE FILLER METAL TO MELT.
   - c. EVIDENCE OF EXTERNAL POROSITY (PIN HOLES) IN WHICH:
     - 1. THE VOIDS ARE LARGER THAN .030 INCHES IN DIA.
     - 2. THE TOTAL NUMBER OF PIN HOLES OF MAXIMUM DIA. EXCEEDS FOUR PER INCH OF BRAZE LENGTH.
   - d. EVIDENCE OF CONCENTRATED SURFACE POROSITY IN WHICH:
     - 1. THE LARGEST POROUS AREA IS GREATER THAN 25 PERCENT OF THE AREA IN ONE LINEAR INCH OF BRAZE.
     - 2. THE LARGEST DIMENSION OF INTERCONNECTED POROSITY SHALL NOT EXCEED .030 INCHES IN DIA.

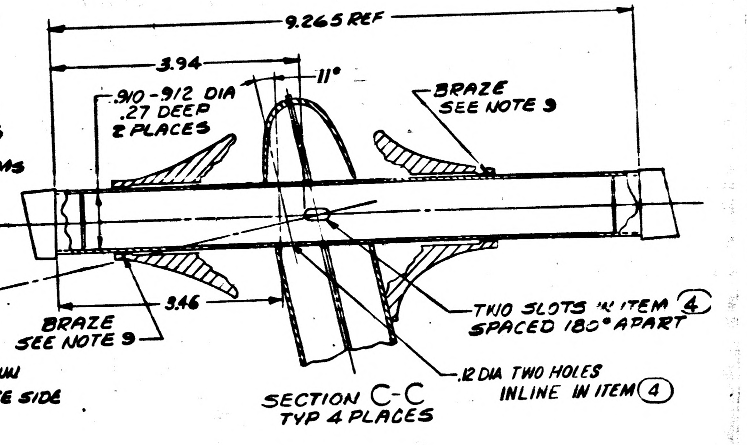
   B. RADIOGRAPHIC EXAMINATION:

   X-RAY PICTURES SHALL BE TAKEN OF EACH OF THE LEGS IN THE DIRECTION AND OF THE AREAS INDICATED IN VIEW B-B. THE RADIOGRAPHIC EXAMINATION SHALL BE CONDUCTED ACCORDING TO MIL-STD-453. THE X-RAYS SHALL INDICATE THAT THE TOTAL UNBRAZED AREA, INCLUDING TRAPPED FLUX, SCATTERED POROSITY AND VOIDS SHALL NOT EXCEED 30 PERCENT OF THE X-RAYED AREA. THE X-RAYED AREAS SHALL REPRESENT THE TOTAL BRAZED AREA OF A JOINT AS FOLLOWS:

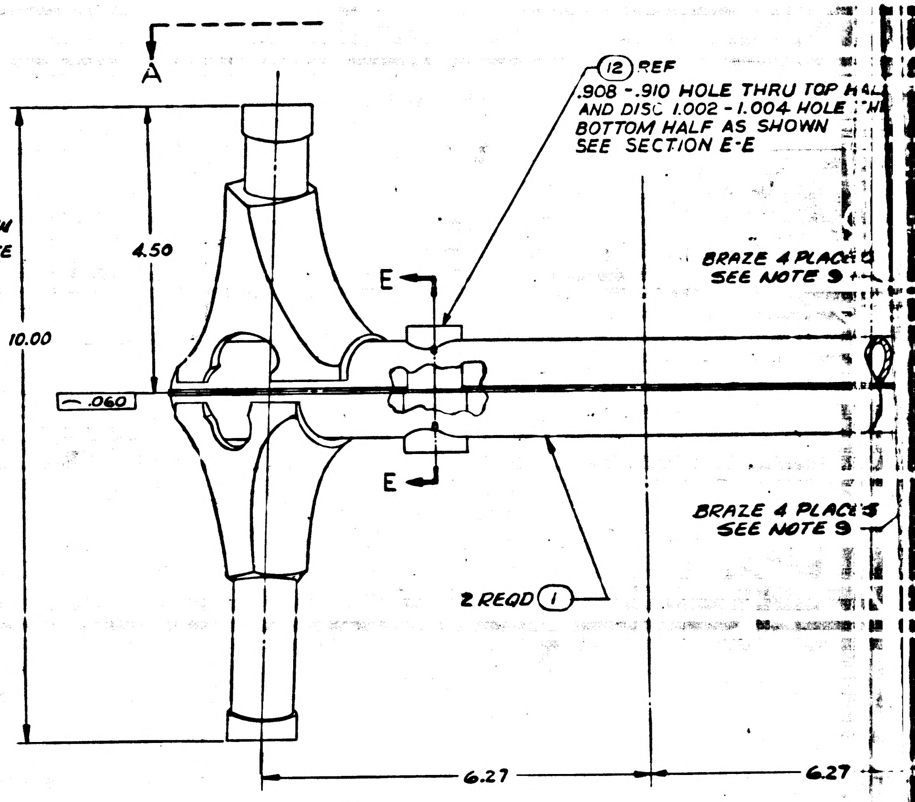
JOINT	X-RAY COVERAGE
A	75%
A1	100%
A2	75%
H	75%
H1	75%
H2	100%

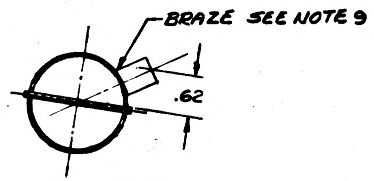

6.043 REF
4 PLACES
OPPOSITE SIDE ⑤
AS SHOWN ⑨
12°14'24" REF
ITEM 4 MOUNTING
1.006-1.009 DIA
3 HOLES THRU ITEMS
① & ② (REF)
4 PLACES
C
C
11.854 BSC
4.07
4.07
5.927 BSC
10 AS SHOWN
6 OPPOSITE SIDE
3.216 REF
4 PLACES
B ⌖ .020 DIA
3 PLACES
F
F
1.32
11
B
B
13.68 DIA (REF)
9 AS SHOWN
5 OPPOSITE SIDE
AS SHOWN 10
OPPOSITE SIDE 6
12 REF
5.86
5.86
6.844 BSC
10.266 BSC

VIEW A-A

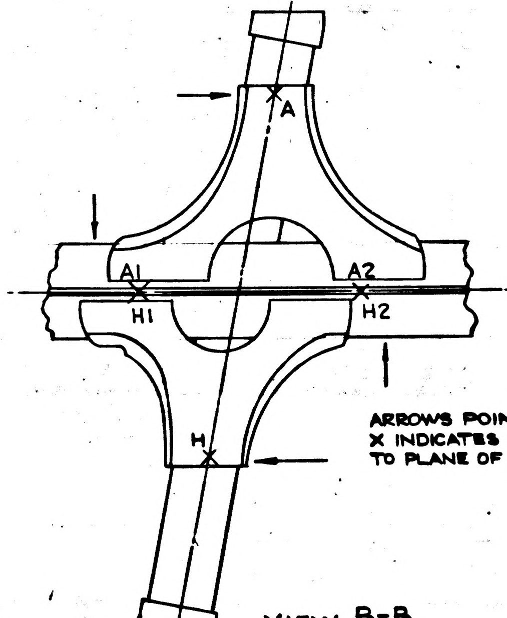

9.265 REF
3.94
11°
.910-.912 DIA
.27 DEEP
2 PLACES
BRAZE
SEE NOTE 9
10°57' REF
3.46
BRAZE
SEE NOTE 9
TWO SLOTS IN ITEM 4
SPACED 180° APART
.12 DIA TWO HOLES
INLINE IN ITEM 4

SECTION C-C
TYP 4 PLACES


A
12 REF
.908 - .910 HOLE THRU TOP HAL
AND DISC 1.002 - 1.004 HOLE TH
BOTTOM HALF AS SHOWN
SEE SECTION E-E
4.50
10.00
.060
E
E
BRAZE 4 PLACES
SEE NOTE 9
BRAZE 4 PLACES
SEE NOTE 9
2 REQD ①
6.27
6.27

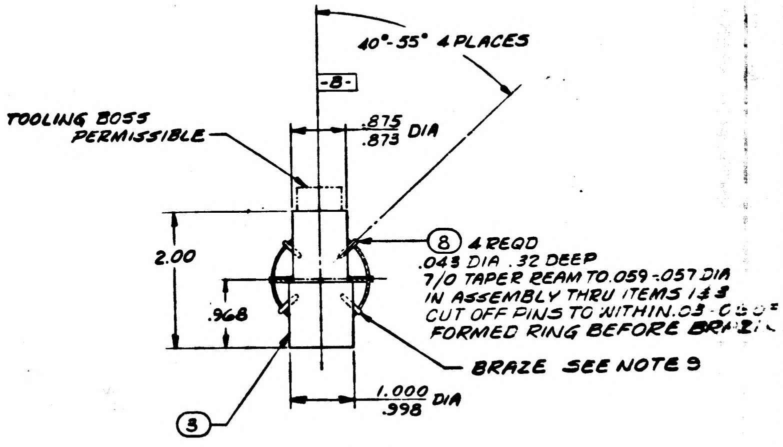

BRAZE SEE NOTE 9
.62

SECTION F-F


A
A1
A2
H1
H2
H

ARROWS POINT TOWARD FILM.
X INDICATES AN ARROW PERPENDICULAR TO PLANE OF DRAWING. SEE NOTE 9

VIEW B-B

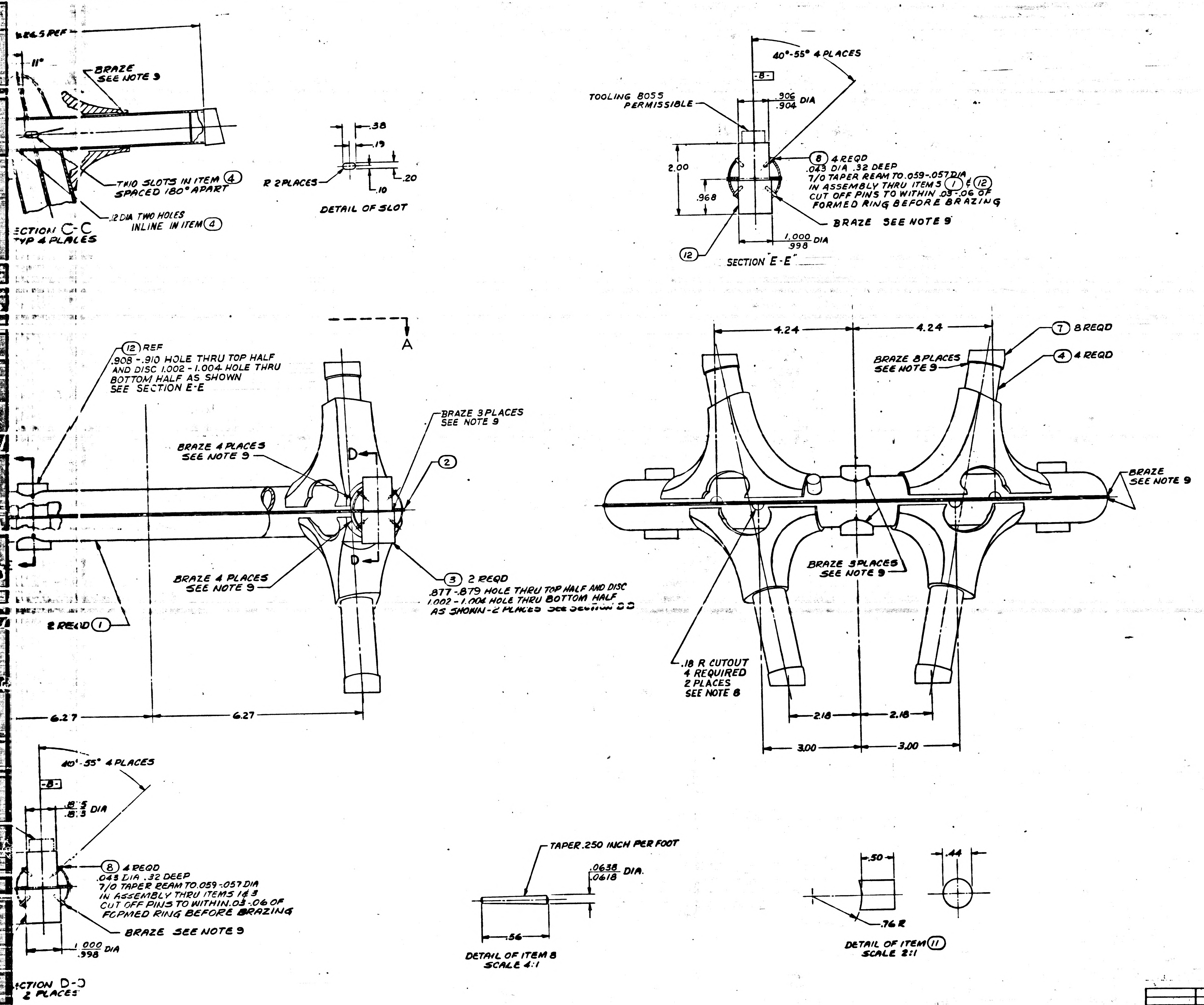

40°-55° 4 PLACES
-B-
TOOLING BOSS
PERMISSIBLE
.875
.873 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF
FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 9
1.000
.998 DIA
③

SECTION D-D
2 PLACES

2H

6899981	J

1-6899981


BRAZE SEE NOTE 9
11°
TWO SLOTS IN ITEM ④ SPACED 180° APART
.12 DIA TWO HOLES INLINE IN ITEM ④
SECTION C-C TYP 4 PLACES
.38
.19
.20
.10
R 2 PLACES
DETAIL OF SLOT
40°-55° 4 PLACES
-B-
TOOLING BOSS PERMISSIBLE
.906 .904 DIA
2.00
.968
⑧ 4 REQD .043 DIA .32 DEEP 7/0 TAPER REAM TO .059-.057 DIA IN ASSEMBLY THRU ITEMS ① & ⑫ CUT OFF PINS TO WITHIN .03-.06 OF FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 9
1.000 .998 DIA
⑫
SECTION E-E
A
⑫ REF .908-.910 HOLE THRU TOP HALF AND DISC 1.002-1.004 HOLE THRU BOTTOM HALF AS SHOWN SEE SECTION E-E
BRAZE 3 PLACES SEE NOTE 9
BRAZE 4 PLACES SEE NOTE 9
②
D
D
BRAZE 4 PLACES SEE NOTE 9
③ 2 REQD .877-.879 HOLE THRU TOP HALF AND DISC 1.002-1.004 HOLE THRU BOTTOM HALF AS SHOWN - 2 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
4.24
4.24
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES SEE NOTE 9
BRAZE SEE NOTE 9
BRAZE 3 PLACES SEE NOTE 9
.18 R CUTOUT 4 REQUIRED 2 PLACES SEE NOTE 8
2.18
2.18
3.00
3.00
40°-55° 4 PLACES
-B-
.815 .813 DIA
⑧ 4 REQD .043 DIA .32 DEEP 7/0 TAPER REAM TO .059-.057 DIA IN ASSEMBLY THRU ITEMS 1 & 3 CUT OFF PINS TO WITHIN .03-.06 OF FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 9
1.000 .998 DIA
SECTION D-D 2 PLACES
TAPER .250 INCH PER FOOT
.0638 .0618 DIA.
.56
DETAIL OF ITEM 8 SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪ SCALE 2:1

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		Revised & Redrawn per D.O. 61688		7 FEB 66	CF
B		INITIAL RELEASE CLASS A PER TDRR 27174		66	DKD
C		REVISED PER TDRR 27900		18 APR 66	JW EL
D		REVISED PER TDRR 28376		9 MAY 66	JK AU
E		REVISED PER TDRR 28537		16 MAY 66	DKD
F		REVISED PER TDRR-29203		7 JA 66	B. JRC
G		REVISED PER TDRR-30331		3 AUG 66	JJB RLW
H		REVISED PER TDRR 30814		5 AUG 66	JT RLW
J		REVISED PER TDRR 31069		OCT 66	AU

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	12	1	6899981-005	SPOOL
SEE NOTE 2B	11	1	6899981-004	BOSS - GROUND LUG
	10	2	6899986	SUPPORT, IMU UPPER LEFT & LOWER RIGHT
	9	2	6899985	SUPPORT, IMU UPPER RIGHT & LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS UP R & LWR L
	5	2	6899983	SUPPORT, OPTICS UP L & LWR R
SEE NOTE 2A	4	4	6899981-002	LEG
SEE NOTE 2B	3	2	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6899979	6899978-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± –
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN LEWANDOWSKI DATE 21 DEC 65
CHECKED 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY,
BRAZED).

SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

6899981

24

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. ALUMINUM TUBING (DRAWN) PER WW-T-700/6 TEMPER O (6061 ES 2106) 1.000 OD × .049 WALL.
   - B. ALUMINUM ALLOY PER QQ-A-225/8 TEMPER T6 (6061 ES 2106).
3. UNLESS OTHERWISE SPECIFIED:
   - A. ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED 125√.
4. ~~DIP BRAZE AND RADIOGRAPHICALLY INSPECT PER ND1002073 EXCEPT AIR COOL TO ROOM TEMPERATURE PRIOR TO CLEANING.~~
5. ~~HEAT TREAT AS FOLLOWS (REF MIL-H-6088-T6-ES2021)~~
   - ~~A. AGE AT 350°F ±10°F FOR 8 HOURS.~~
   - ~~B. CHECK HARDNESS OF ITEMS ③ AND ⑫ ON THEIR FLAT SURFACES. MINIMUM HARDNESS TO BE BRINELL 70.~~
6. TAG COMPLETED ASSEMBLY USING DRAWING NUMBER PER ND1002019.
7. RADIAL LOCATION OF TAPER PINS, ITEM ⑧ REF IS OPTIONAL.
8. FOR CUTOUTS NOT SHOWN TO BE LOCATED 180° FROM INDICATED POSITION.
9. DIP BRAZE PER ND1002073 WITH THE FOLLOWING EXCEPTIONS:
   - A. AIR COOL AFTER REMOVING THE ASSEMBLY FROM THE FLUX BATH.
   - B. CHEMICAL CLEANING AFTER DIP BRAZING SHALL BE LIMITED TO ONE OF THE FOLLOWING THREE METHODS LISTED IN ND1002073: PARA. 3.7.a, 3.7.d, OR 3.7.e.
   - C. THE VISUAL MECHANICAL AND RADIOGRAPHIC INSPECTION REQUIREMENTS SHALL BE AS FOLLOWS: FAILURE TO MEET THESE REQUIREMENTS SHALL BE CAUSE FOR REJECTION.

1. VISUAL INSPECTION:

EACH BRAZED JOINT SHALL BE VISUALLY INSPECTED. FILLER METAL SHALL BE PRESENT IN THE JOINT AREA ALONG ALL EXPOSED EDGES. FILLET RADII SHALL BE ANY DIMENSION GREATER THAN ZERO. JOINTS SHALL ALSO BE EXAMINED FOR THE FOLLOWING:

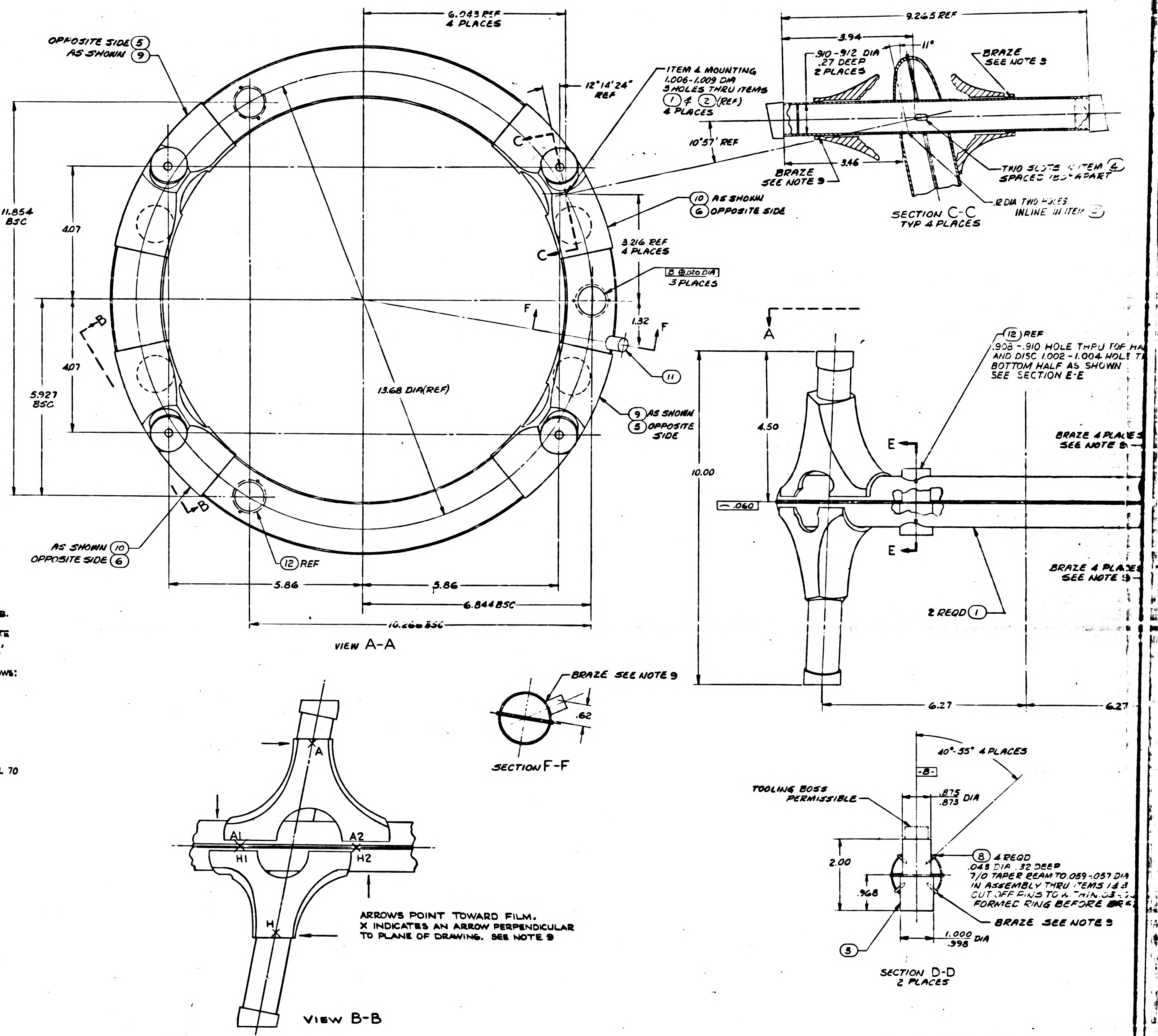
- a. EVIDENCE OF MELTING PARENT METAL.
- b. FAILURE OF BRAZE FILLER METAL TO MELT.
- c. EVIDENCE OF EXTERNAL POROSITY (PIN HOLES) IN WHICH:
  - 1. THE VOIDS ARE LARGER THAN .030 INCHES IN DIA.
  - 2. THE TOTAL NUMBER OF PIN HOLES OF MAXIMUM DIA. EXCEEDS FOUR PER INCH OF BRAZE LENGTH.
- d. EVIDENCE OF CONCENTRATED SURFACE POROSITY IN WHICH.
  - 1. THE LARGEST POROUS AREA IS GREATER THAN 25 PERCENT OF THE AREA IN ONE LINEAR INCH OF BRAZE.
  - 2. THE LARGEST DIMENSION OF INTERCONNECTED POROSITY SHALL NOT EXCEED .030 INCHES IN DIA.

2. RADIOGRAPHIC EXAMINATION:

X-RAY PICTURES SHALL BE TAKEN OF EACH OF THE LEGS IN THE DIRECTION AND OF THE AREAS INDICATED IN VIEW B-B. THE RADIOGRAPHIC EXAMINATION SHALL BE CONDUCTED ACCORDING TO MIL-STD-453. THE X-RAYS SHALL INDICATE THAT THE TOTAL UNBRAZED AREA, INCLUDING TRAPPED FLUX, SCATTERED POROSITY AND VOIDS SHALL NOT EXCEED 30 PERCENT OF THE X-RAYED AREA. THE X-RAYED AREAS SHALL REPRESENT THE TOTAL BRAZED AREA OF A JOINT AS FOLLOWS:

JOINT	X-RAY COVERAGE
A	75%
A1	100%
A2	75%
H	75%
H1	75%
H2	100%

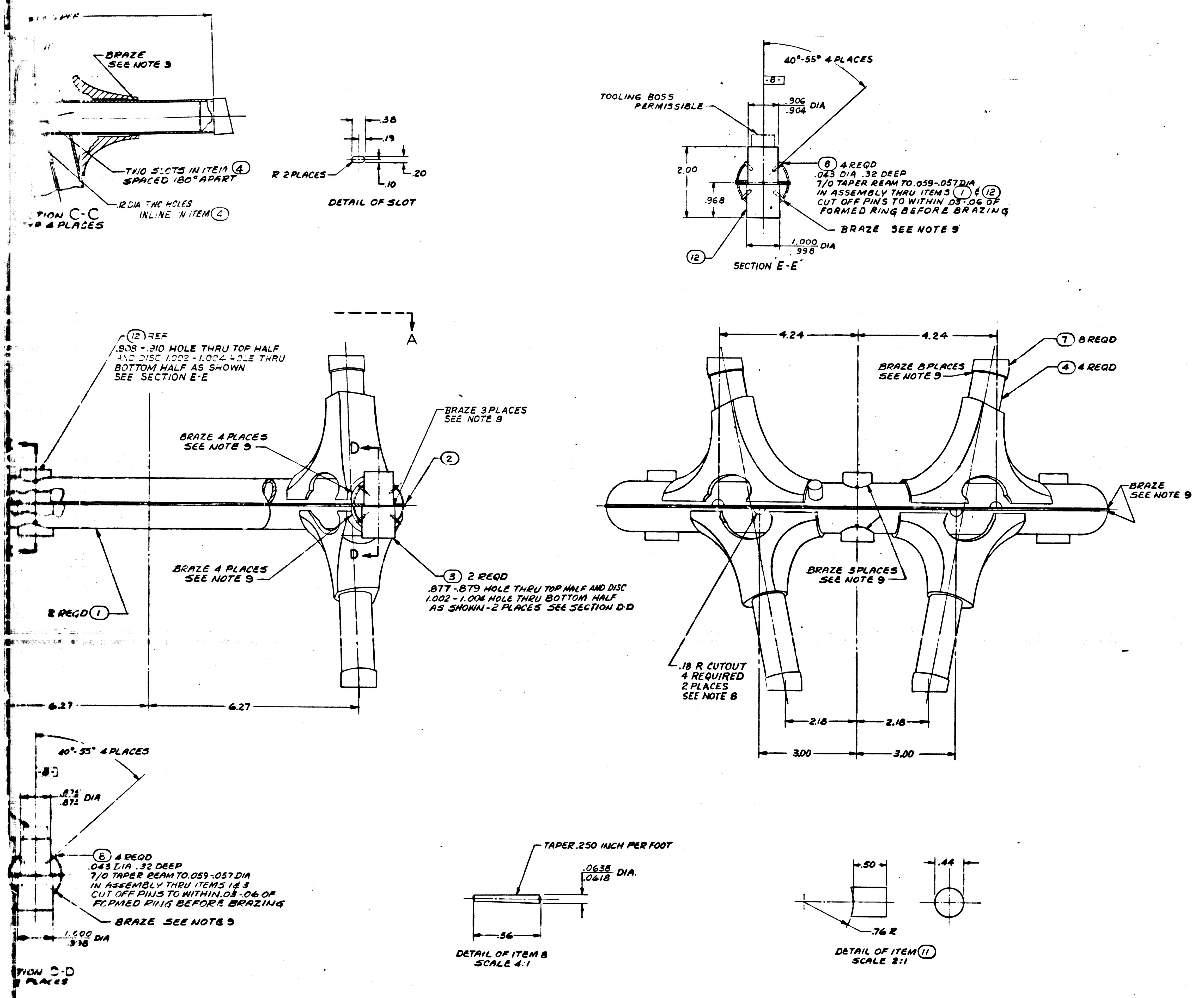
10. HEAT TREAT ASSEMBLY TO OBTAIN A MINIMUM HARDNESS OF BRINELL 70 ON FLAT SURFACES OF ITEMS ③ AND ⑫.



6.043 REF
4 PLACES
OPPOSITE SIDE ⑤
AS SHOWN ⑨
12°14'24" REF
ITEM 4 MOUNTING
1.006-1.009 DIA
3 HOLES THRU ITEMS
① & ② (REF)
4 PLACES
C
C
11.854 BSC
4.07
4.07
5.927 BSC
⑩ AS SHOWN
⑥ OPPOSITE SIDE
3.216 REF
4 PLACES
B ⊕.020 DIA
3 PLACES
1.32
F
F
B
B
⑪
13.68 DIA (REF)
⑨ AS SHOWN
⑤ OPPOSITE SIDE
AS SHOWN ⑩
OPPOSITE SIDE ⑥
⑫ REF
5.86
5.86
6.844 BSC
10.266 BSC
VIEW A-A
9.265 REF
3.94
11°
.910-.912 DIA
.27 DEEP
2 PLACES
BRAZE
SEE NOTE 9
10°57' REF
3.46
BRAZE
SEE NOTE 9
TWO SLOTS IN ITEM ④
SPACED 180° APART
.12 DIA TWO HOLES
INLINE IN ITEM ③
SECTION C-C
TYP 4 PLACES
A
⑫ REF
.908-.910 HOLE THRU TOP HA
AND DISC 1.002-1.004 HOLE TH
BOTTOM HALF AS SHOWN
SEE SECTION E-E
4.50
10.00
.060
E
E
BRAZE 4 PLACES
SEE NOTE 9
BRAZE 4 PLACES
SEE NOTE 9
2 REQD ①
6.27
6.27
BRAZE SEE NOTE 9
.62
SECTION F-F
A
A1
A2
H1
H2
H
ARROWS POINT TOWARD FILM.
X INDICATES AN ARROW PERPENDICULAR TO PLANE OF DRAWING. SEE NOTE 9
VIEW B-B
40°-55° 4 PLACES
-B-
TOOLING BOSS
PERMISSIBLE
.875/.873 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03
FORMED RING BEFORE BRA
BRAZE SEE NOTE 9
1.000/.998 DIA
③
SECTION D-D
2 PLACES

6899981. L

1/6899981


BRAZE SEE NOTE 9
TWO SLOTS IN ITEM ④ SPACED 180° APART
.12 DIA TWO HOLES INLINE IN ITEM ④
TION C-C
4 PLACES
.38
.19
R 2 PLACES
.20
.10
DETAIL OF SLOT
40°-55° 4 PLACES
-B-
TOOLING BOSS PERMISSIBLE
.906 / .904 DIA
2.00
.968
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS ① & ⑫
CUT OFF PINS TO WITHIN .03-.06 OF FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 9
1.000 / .998 DIA
⑫
SECTION E-E
A
⑫ REF
.908-.910 HOLE THRU TOP HALF AND DISC 1.002-1.004 HOLE THRU BOTTOM HALF AS SHOWN SEE SECTION E-E
BRAZE 4 PLACES SEE NOTE 9
BRAZE 3 PLACES SEE NOTE 9
②
D
D
BRAZE 4 PLACES SEE NOTE 9
③ 2 REQD
.877-.879 HOLE THRU TOP HALF AND DISC 1.002-1.004 HOLE THRU BOTTOM HALF AS SHOWN - 2 PLACES SEE SECTION D-D
2 REQD ①
6.27
6.27
4.24
4.24
⑦ 8 REQD
④ 4 REQD
BRAZE 8 PLACES SEE NOTE 9
BRAZE SEE NOTE 9
BRAZE 5 PLACES SEE NOTE 9
.18 R CUTOUT 4 REQUIRED 2 PLACES SEE NOTE 8
2.18
2.18
3.00
3.00
40°-55° 4 PLACES
-B-
.875 / .873 DIA
⑧ 4 REQD
.043 DIA .32 DEEP
7/0 TAPER REAM TO .059-.057 DIA
IN ASSEMBLY THRU ITEMS 1 & 3
CUT OFF PINS TO WITHIN .03-.06 OF FORMED RING BEFORE BRAZING
BRAZE SEE NOTE 9
1.000 / .998 DIA
TION D-D
PLACES
TAPER .250 INCH PER FOOT
.0638 / .0618 DIA.
.56
DETAIL OF ITEM 8
SCALE 4:1
.50
.44
.76 R
DETAIL OF ITEM ⑪
SCALE 2:1

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED & REDRAWN PER D.O. 61688		7 FEB 66	CP
B		INITIAL RELEASE CLASS A PER TDRR		66	
C		REVISED PER TDRR 27900		18 APR 66	EF
D		REVISED PER TDRR 28376		9 MAY 66	AJ
E		REVISED PER TDRR 28597		6 MAY 66	
F		REVISED PER TDRR-29203		66	
G		REVISED PER TDRR-30331		3 AUG 66	JB
H		REVISED PER TDRR 30814		5 AUG 66	
J		REVISED PER TDRR 31069		66	
K		REVISED PER TDRR 33065		3 MAR 67	
L		REVISED PER TDRR 35.52		DEC 67	

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	12	1	6899981-005	SPOOL
SEE NOTE 2B	11	1	6899981-004	BOSS-GROUND LUG
	10	2	6899986	SUPPORT IMU UPPER LEFT [illegible] RIGHT
	9	2	6899985	SUPPORT IMU UPPER R[illegible] LOWER LEFT
SEE NOTE 2B	8	12	6899981-003	PIN, TAPER
	7	8	6899962	FOOT, MOUNTING
	6	2	6899984	SUPPORT, OPTICS [illegible] & LWR L
	5	2	6899983	SUPPORT, OPTICS [illegible] & LWR R
SEE NOTE 2A	4	1	6899981-002	LEG
SEE NOTE 2B	3	2	6899981-001	SPOOL
	2	1	6899961	DISC
	1	2	6899960	RING, FORMED

LIST OF PARTS AND MATERIALS

6899979	6899978-71
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02
3 PLACE DECIMALS ±.005
ANGLES ±—
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN LEN McDowell 21 DEC 65
CHECKED 22 DEC 65
APPROVAL MINSTER 22 DEC
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, NAVIGATION, LEM
(INSEPARABLE ASSEMBLY,
BRAZED).

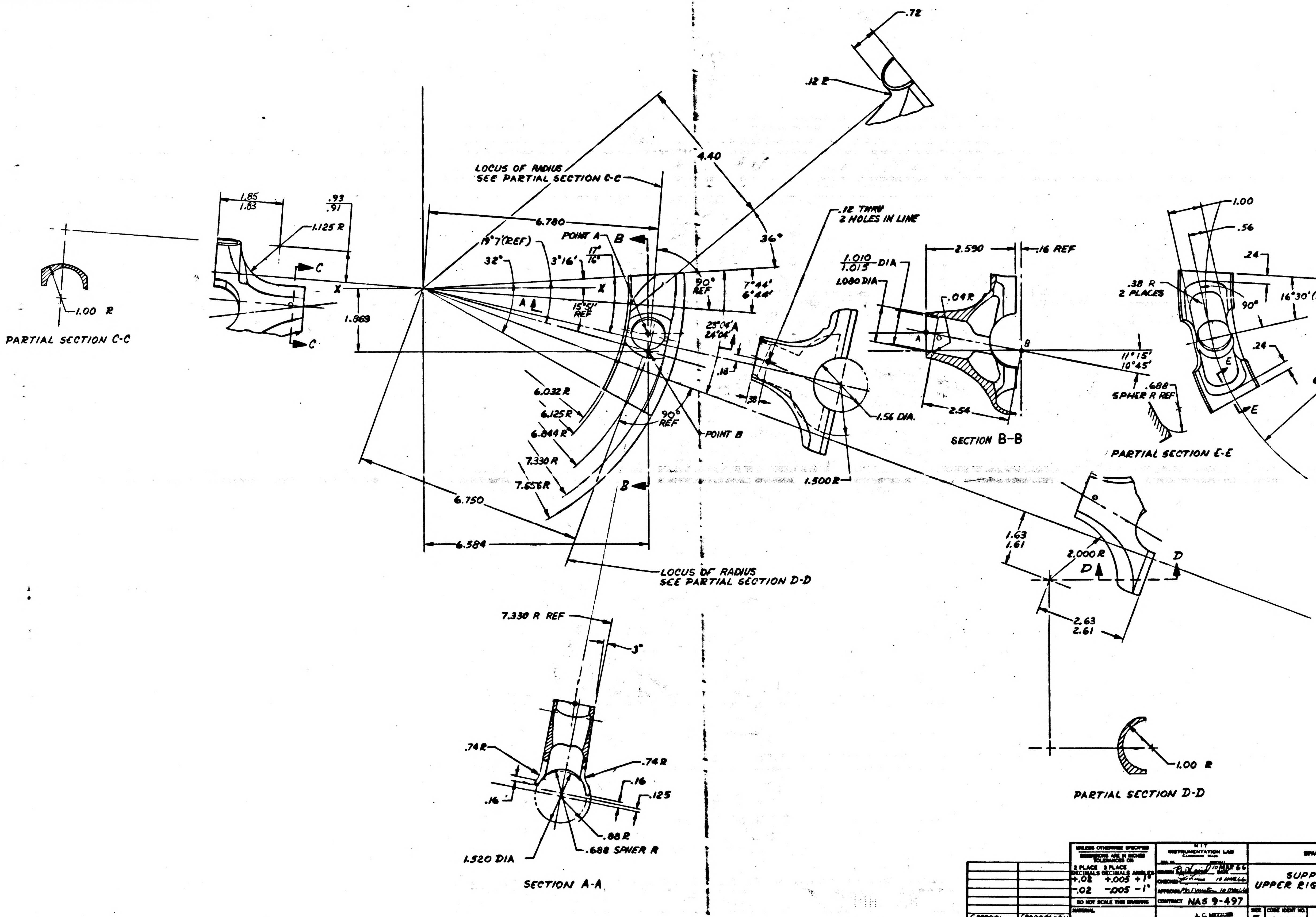
SIZE J
CODE IDENT NO. 80230
6899981
SCALE 1:1
SHEET 1 OF 1

6899981 L

2/6899981

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY, QQ-A-250/11, TEMPER T651 (TYPE 6061, £52106).
3. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 125/√.
   B. ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
4. IDENTIFY USING DRAWING NUMBER PER ND1002019.
5. MUST BE FREE FROM BURRS.

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	INITIAL RELEASE CLASS A PER TDRR 27174		12 MAR 66	DRD DRD

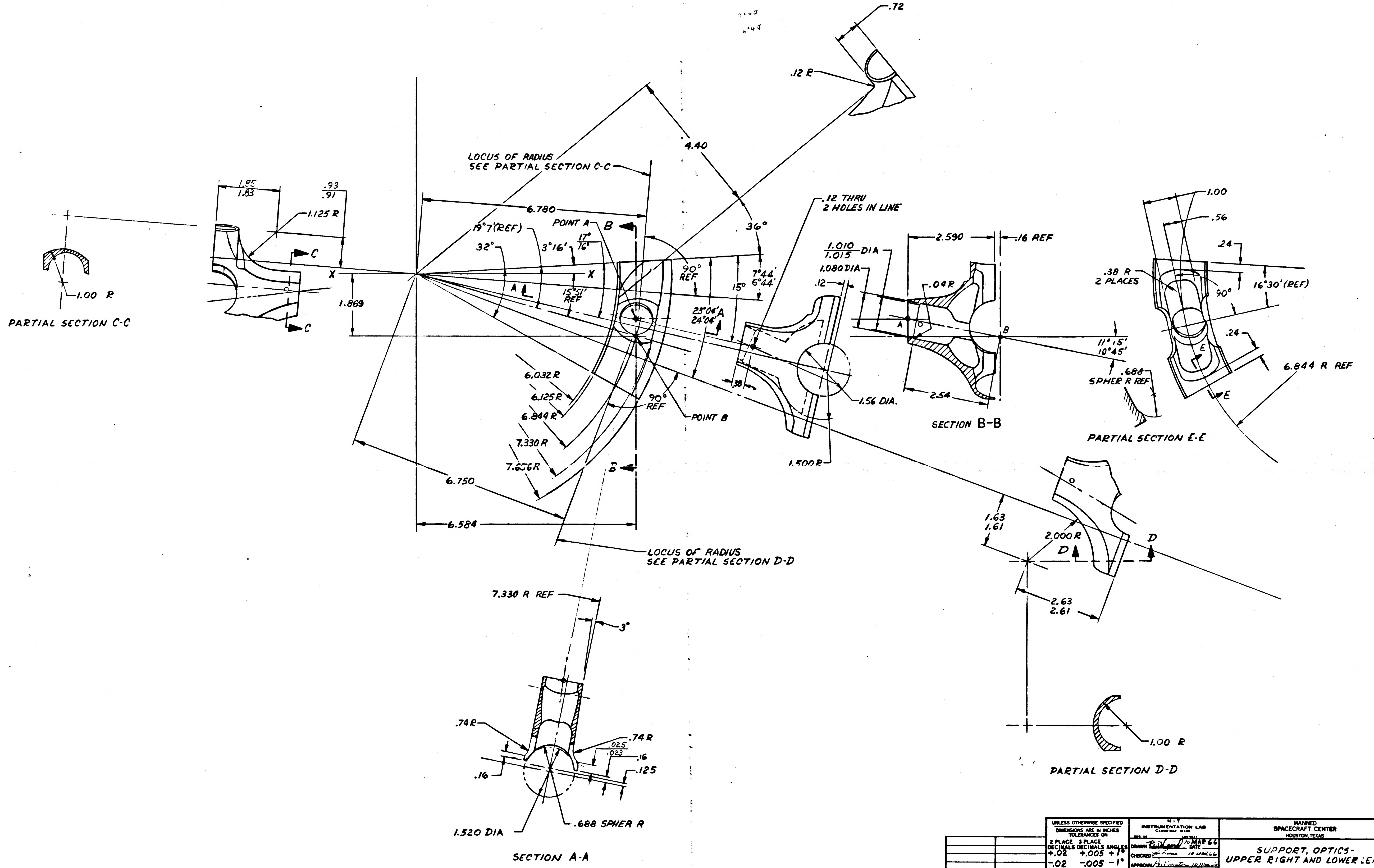


.72
.12 R
4.40
36°
LOCUS OF RADIUS SEE PARTIAL SECTION C-C
1.85
1.83
.93
.91
1.125 R
C
X
C
1.00 R
PARTIAL SECTION C-C
6.780
19°7'(REF)
POINT A
B
32°
3°16'
17°
16°
X
A
15°51' REF
90° REF
7°44'
6°44'
1.869
25°04'
24°04'
A
.18
.38
6.032 R
6.125 R
6.844 R
7.330 R
7.656 R
90° REF
POINT B
B
6.750
6.584
LOCUS OF RADIUS SEE PARTIAL SECTION D-D
.12 THRU 2 HOLES IN LINE
1.010
1.015 DIA
1.080 DIA
2.590
.16 REF
.04 R
A
B
2.54
1.56 DIA.
1.500 R
SECTION B-B
11°15'
10°45'
.688 SPHER R REF
1.00
.56
.24
.38 R 2 PLACES
90°
16°30'(REF)
.24
E
E
6.844 R REF
PARTIAL SECTION E-E
1.63
1.61
2.000 R
D
D
2.63
2.61
1.00 R
PARTIAL SECTION D-D
7.330 R REF
3°
.74 R
.74 R
.16
.125
.16
1.520 DIA
.88 R
.688 SPHER R
SECTION A-A

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		2 PLACE DECIMALS +.02 -.02 3 PLACE DECIMALS +.005 -.005 ANGLES +1° -1°	DRAWN 10 MAR 66 CHECKED 10 MAR 66 APPROVAL 10 MAR 66	SUPPORT, OPTICS- UPPER RIGHT AND LOWER LEFT
		DO NOT SCALE THIS DRAWING	CONTRACT NAS 9-497	
6899981	6899980-011	MATERIAL SEE NOTE 2	NASA APPROVAL A. C. METZGER	SIZE E · CODE IDENT NO. 80230 · 6899984
NEXT ASSY	USED ON			
APPLICATION		APPROVAL 11 MAR 66	MIT APPROVAL	SCALE FULL · SHEET 1 OF 1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY, QQ-A-250/11, TEMPER T651 (TYPE 6061, ES2106).
3. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 125/√.
   B. ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
4. IDENTIFY USING DRAWING NUMBER PER ND1002019.
5. MUST BE FREE FROM BURRS.

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	INITIAL RELEASE CLASS A PER TDRR		12 MAR 66	DKD
	B	REVISED PER TDRR 28226		2 MAY 66	


.72
.12 R
4.40
LOCUS OF RADIUS SEE PARTIAL SECTION C-C
36°
.12 THRU 2 HOLES IN LINE
1.85
1.83
.93
.91
1.125 R
C
X
1.869
C
1.00 R
PARTIAL SECTION C-C
6.780
19°7'(REF)
32°
POINT A
B
3°16'
17°
16°
X
90° REF
7°44'
6°44'
15°
15°51' REF
A
23°04'
24°04'
A
1.010
1.015 DIA
1.080 DIA
.12
.38
1.56 DIA.
1.500 R
6.032 R
6.125 R
6.844 R
7.330 R
7.656 R
90° REF
POINT B
B
6.750
6.584
LOCUS OF RADIUS SEE PARTIAL SECTION D-D
2.590
.16 REF
.04 R
A
B
2.54
SECTION B-B
1.00
.56
.24
.38 R 2 PLACES
90°
16°30'(REF)
.24
11°15'
10°45'
.688 SPHER R REF
E
E
6.844 R REF
PARTIAL SECTION E-E
1.63
1.61
2.000 R
D
D
2.63
2.61
1.00 R
PARTIAL SECTION D-D
7.330 R REF
3°
.74 R
.74 R
.025
.023
.16
.125
.16
1.520 DIA
.688 SPHER R
SECTION A-A

6899981	6899980-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS +.02 -.02
3 PLACE DECIMALS +.005 -.005
ANGLES +1° -1°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN 10 MAR 66
CHECKED 10 MAR 66
APPROVAL
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

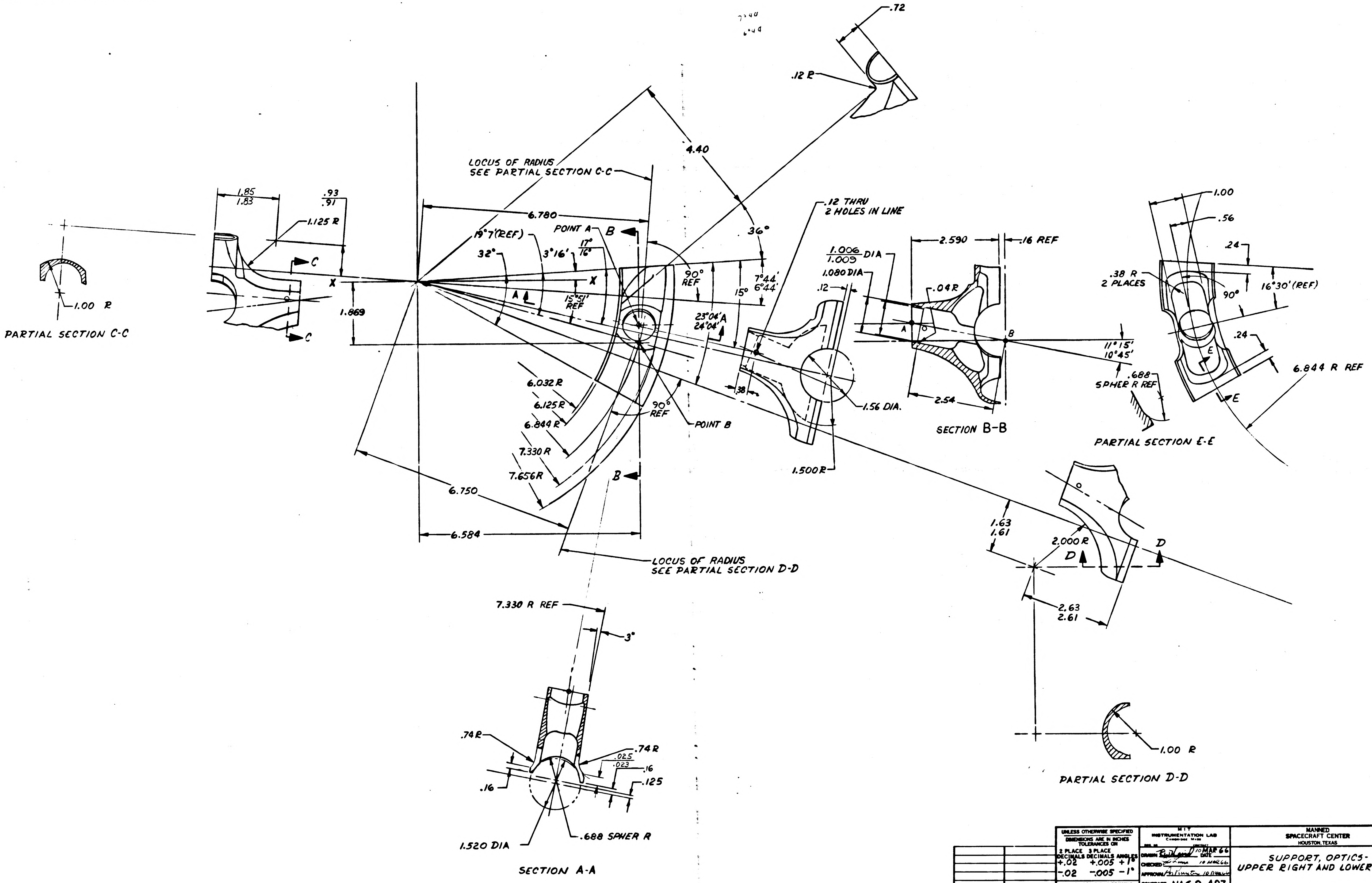
SUPPORT, OPTICS-
UPPER RIGHT AND LOWER LEFT

SIZE E
CODE IDENT NO. 80230
6899984
SCALE FULL
SHEET 1 OF 1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY, QQ-A-250/11, TEMPER T651 (TYPE 6061, ES2106).
3. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 125/√.
   B. ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
4. IDENTIFY USING DRAWING NUMBER PER ND1002019.
5. MUST BE FREE FROM BURRS.

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	INITIAL RELEASE CLASS A PER TDRR 7174		12 MAR 66	DKD DKD
	B	REVISED PER TDRR 28226		2 MAY 66	JJJ EF
	C	REVISED PER TDRR 30333		3 AUG	RPS J



.72
.12 R
4.40
36°
LOCUS OF RADIUS SEE PARTIAL SECTION C-C
6.780
POINT A
B
19°7'(REF)
32°
3°16'
17°
16°
X
90° REF
7°44'
6°44'
15°
A
15°51' REF
23°04' A
24°04'
1.869
X
1.85
1.83
.93
.91
1.125 R
C
C
1.00 R
PARTIAL SECTION C-C
6.032 R
6.125 R
6.844 R
7.330 R
7.656 R
90° REF
POINT B
6.750
B
6.584
LOCUS OF RADIUS SEE PARTIAL SECTION D-D
.12 THRU 2 HOLES IN LINE
1.006
1.009 DIA
1.080 DIA
.12
.38
1.56 DIA.
1.500 R
2.590
.16 REF
.04 R
A
B
2.54
SECTION B-B
11°15'
10°45'
1.00
.56
.24
.38 R 2 PLACES
16°30'(REF)
90°
.24
E
E
.688 SPHER R REF
6.844 R REF
PARTIAL SECTION E-E
1.63
1.61
2.000 R
D
D
2.63
2.61
7.330 R REF
3°
.74 R
.74 R
.025
.023
.16
.125
.16
1.520 DIA
.688 SPHER R
SECTION A-A
1.00 R
PARTIAL SECTION D-D

6899981	6899980-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS +.02 -.02
3 PLACE DECIMALS +.005 -.005
ANGLES +1° -1°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
APPROVAL 11 MAR 66

M I T
INSTRUMENTATION LAB
Cambridge Mass
DRAWN 10 MAR 66
CHECKED 10 MAR 66
APPROVAL 10 MAR 66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

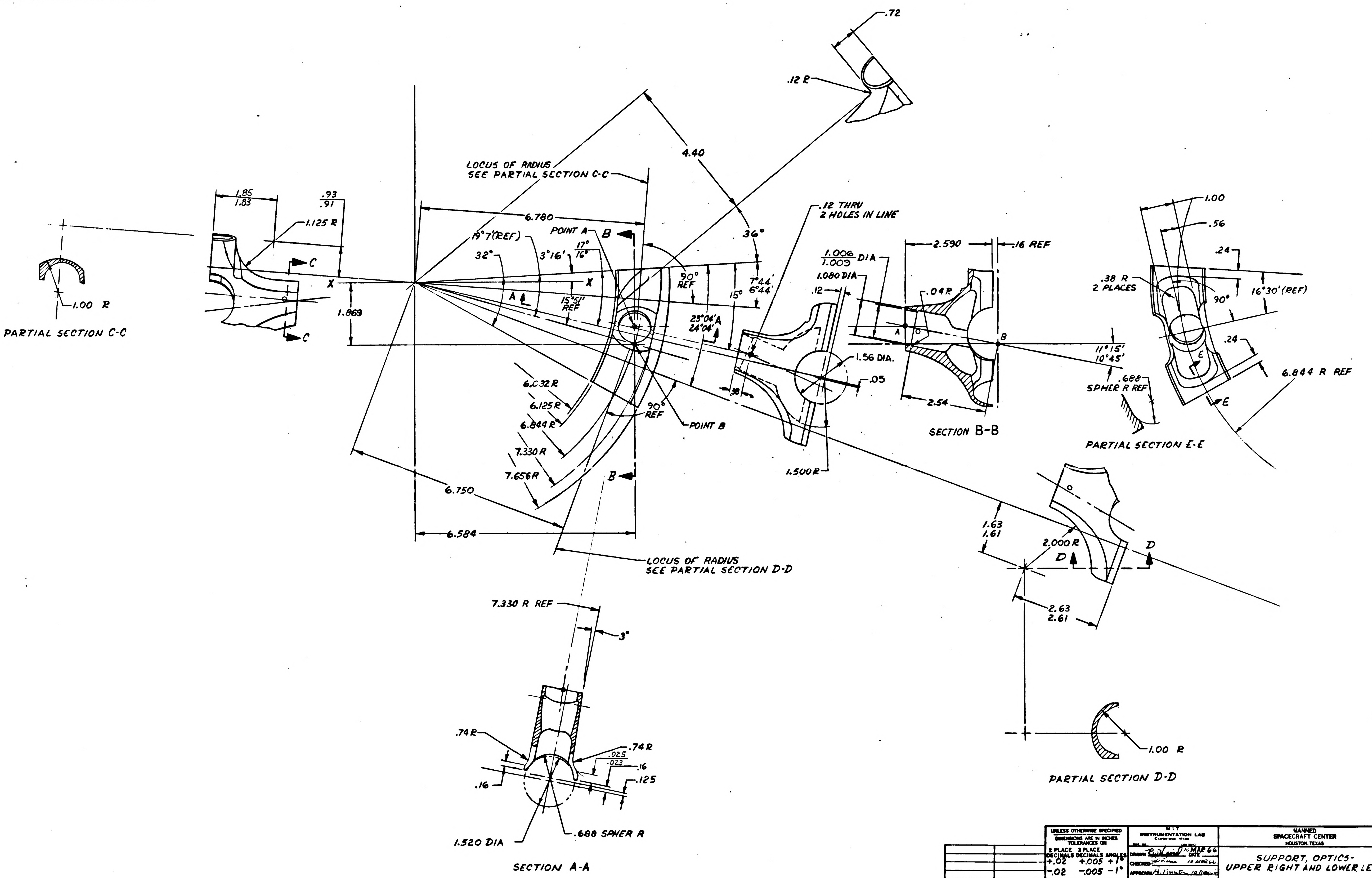
SUPPORT, OPTICS-
UPPER RIGHT AND LOWER LEFT

SIZE E
CODE IDENT NO. 80230
6899984
SCALE FULL
SHEET 1 OF 1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY, QQ-A-250/11, TEMPER T651 (TYPE 6061, E52106).
3. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 125/√.
   B. ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
4. IDENTIFY USING DRAWING NUMBER PER ND1002019.
5. MUST BE FREE FROM BURRS.

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
Ⓜ	A	INITIAL RELEASE CLASS A PER TDRR 27174		12 MAR 66	DVD / DVD
Ⓜ	B	REVISED PER TDRR 28226		2 MAY 66	JJJ / EF
	C	REVISED PER TDRR 30333		8 AUG 66	RPS / J
	D	REVISED PER TDRR 30720		24 AUG 66	JJE / J


.72
.12 R
4.40
36°
LOCUS OF RADIUS SEE PARTIAL SECTION C-C
6.780
19°7'(REF)
POINT A
B
32°
3°16'
17°/16°
X
90° REF
15°
7°44'/6°44'
15°51' REF
A
23°04'/24°04' A
1.869
.12 THRU 2 HOLES IN LINE
1.006/1.003 DIA
1.080 DIA
.12
1.56 DIA.
.05
.38
1.500 R
6.032 R
6.125 R
6.844 R
7.330 R
7.656 R
90° REF
POINT B
B
6.750
6.584
LOCUS OF RADIUS SEE PARTIAL SECTION D-D
1.85/1.83
.93/.91
1.125 R
C
C
1.00 R
PARTIAL SECTION C-C
2.590
.16 REF
.04 R
A
B
2.54
SECTION B-B
11°15'/10°45'
1.00
.56
.24
.38 R 2 PLACES
90°
16°30'(REF)
.24
E
E
.688 SPHER R REF
6.844 R REF
PARTIAL SECTION E-E
1.63/1.61
2.000 R
D
D
2.63/2.61
1.00 R
PARTIAL SECTION D-D
7.330 R REF
3°
.74 R
.74 R
.025/.023
.16
.16
.125
1.520 DIA
.688 SPHER R
SECTION A-A

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ±.02 3 PLACE DECIMALS ±.005 ANGLES ±1°	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		DO NOT SCALE THIS DRAWING	DRAWN Rutland 10 MAR 66 CHECKED 10 MAR 66 APPROVAL Arlington 10 MAR 66 CONTRACT NAS 9-497	SUPPORT, OPTICS- UPPER RIGHT AND LOWER LEFT
6899981	6899980-011	MATERIAL SEE NOTE 2	NASA APPROVAL	SIZE E · CODE IDENT NO. 80230 · 6899984
NEXT ASSY	USED ON	APPROVAL	MIT APPROVAL	SCALE FULL · SHEET 1 OF 1
APPLICATION				

1000069

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER MXC 205705		11 OCT 65	RLP E F
B		REVISED PER MXC 206514		3 NOV 65	RLP
C		REVISED PER MXC 207002		1 DEC 65	RLP
D		REVISED PER MXC 207904		28 DEC 65	JFK MEM
E		INITIAL RELEASE CLASS A PER TDRR 25864		29 DEC 65	JFK

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

COVER P/N	TO BE USED ON	
	CONNECTOR P/N	REFERENCE DESIGNATION
MS 3181 -10	1010930-014	56J1
MS 3180 -24	1010947-205, 105	56P11, 56P17
MS 3180 -20	1010947-101	56P8
MS 3180 -18	1010929-101, 102, 103, 201, 202, 203, 204, 104	56P5, 56P6, 56P7, 56P10, 56P12, 56P13, 56P14, 56P16, 56P18
MS 3180 -16	1010929-206	56P9
MS 3180 -14	1010929-109	56P15
1897377-001	1010965-001, 002	56P21, 56P20
6900059	6014534	56P4
6900060	6014533	56P3
6900061	6014532	56P2
6900062	6014531	56P1
6900063	6014535	56P19

COVER PN	TO BE USED ON	
	ASSEMBLY NO	REFERENCE DESIGNATION
6900068	6007000 (PTA)	35A2J19
6900069	N/A (SIG)	40J53
6900070	6007200 (PSA)	45J19

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1			6900070 -011	COVER ASSY, HEADER, PSA
1			6900069 -011	COVER ASSY, HEADER, SIG
1			6900068 -011	COVER ASSY, HEADER, PTA
1			6900059	COVER, ELECTRICAL CONNECTOR
1			6900060	
1			6900061	
1			6900062	
1			6900063	
2			1897377-001	COVER, ELECTRICAL CONNECTOR
1			MS 3180-14	CAP, PROTECTIVE, ELEC CONN PLUG
1			-16	
9			-18	
1			-20	
2			MS 3180 -24	PLUG
1			MS 3181-10	CAP, PROTECTIVE, ELEC CONN RECEP

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 30 MAR 65
CHECKED Ed Foster 31 MAR 65
APPROVAL L. E. Hayes 1 APR. 65
APPROVAL
A. C. METZGER
NASA APPROVAL
MIT APPROVAL 1 Feb 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER SET,
ELECTRICAL CONNECTOR

CODE IDENT NO. 99974
SIZE D
6900001
SCALE —
SHEET 1 OF 1

F 1000069

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER MXC 205705		11 OCT 65	RLP
B		REVISED PER MXC 206514		3 NOV 65	RLP
C		REVISED PER MXC 207002		1 DEC 65	RLP
D		REVISED PER MXC 207904		28 DEC 65	MEF
E		INITIAL RELEASE CLASS A PER TDRR 25861		29 DEC 65	
F		*REVISED PER TDRR 27655*		6 APR 66	cmk RWH

COVER P/N	TO BE USED ON	
	CONNECTOR P/N	REFERENCE DESIGNATION
MS 3181 -10	1010930-014	56J1
MS 3180 -24	1010947-205, 105	56P11, 56P17
MS 3180 -20	1010947-101	56P8
MS 3180 -18	1010929-101, 102, 103, 201, 202, 203, 204, 104	56P5, 56P6, 56P7, 56P10, 56P12 56P13, 56P14, 56P16, 56P18
MS 3180 -16	1010929-206	56P9
MS 3180 -14	1010929-109	56P15
1897377-002	1010965-001, 002	56P21, 56P20
6900059	6014534	56P4
6900060	6014533	56P3
6900061	6014532	56P2
6900062	6014531	56P1
6900063	6014535	56P19

COVER PN	TO BE USED ON	
	ASSEMBLY NO	REFERENCE DESIGNATION
6900068	*6007000 (PTA)*	*35A2J19*
6900069	*N/A (SIG)*	*40J53*
6900070	*6007200 (PSA)*	*45J19*

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1			6900070 -011	COVER ASSY, HEADER, PSA
1			6900069 -011	COVER ASSY, HEADER, SIG
1			6900068 -011	COVER ASSY, HEADER, PTA
1			6900059	COVER, ELECTRICAL CONNECTOR
1			6900060	
1			6900061	
1			6900062	
1			6900063	
2			1897377-002	COVER, ELECTRICAL CONNECTOR
1			MS 3180-14	CAP, PROTECTIVE, ELEC CONN PLUG
1			-16	
9			-18	
1			-20	
2			MS 3180-24	PLUG
1			MS 3181-10	CAP, PROTECTIVE, ELEC CONN RECEP

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN A. Kauffman DATE 30 MAR 65
CHECKED Ed Foster 31 MAR 65
APPROVAL L. E. Hanna 1 APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER SET, ELECTRICAL CONNECTOR

CODE IDENT NO. 99974
SIZE D
6900001
SCALE —
SHEET 1 OF 1

MIL 1078D-P

9 1000069 2

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER MXC 205705		11 OCT 65	RLP
B		REVISED PER MXC 206514		3 NOV 65	RLP
C		REVISED PER MXC 207002		1 DEC 65	RLP
D		REVISED PER MXC 207904		28 DEC 65	MEN
E		INITIAL RELEASE CLASS A PER TDRR 25861		29 DEC 65	
F		REVISED PER TDRR 27655		6 APR 66	RWH
G		REVISED PER TDRR 29413		14 JUN 66	J.E.G.

COVER P/N	TO BE USED ON	
	CONNECTOR P/N	REFERENCE DESIGNATION
MS 3181 -10	1010930-014	56J1
MS 3180 -24	1010947-205, 105	56P11, 56P17
MS 3180 -20	1010947-101	56P8
MS 3180 -18	1010929-101, 102, 103, 201, 202, 203, 204, 104	56P5, 56P6, 56P7, 56P10, 56P12, 56P13, 56P14, 56P16, 56P18
MS 3180 -16	1010929-206	56P9
MS 3180 -14	1010929-109	56P15
1897377-002	1010965-001, 002	56P21, 56P20
6900059	6014534	56P4
6900060	6014533	56P3
6900061	6014532	56P2
6900062	6014531	56P1
6900063	6014535	56P19

COVER PN	TO BE USED ON	
	ASSEMBLY NO	REFERENCE DESIGNATION
6900068	6007000 (PTA)	35A2J19
6900069	N/A (SIG)	30J1
6900070	6007200 (PSA)	45J19

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1			6900070 -011	COVER ASSY, HEADER, PSA
1			6900069 -011	COVER ASSY, HEADER, SIG
1			6900068 -011	COVER ASSY, HEADER, PTA
1			6900059	COVER, ELECTRICAL CONNECTOR
1			6900060	
1			6900061	
1			6900062	
1			6900063	
2			1897377-002	COVER, ELECTRICAL CONNECTOR
1			MS 3180-14	CAP, PROTECTIVE, ELEC CONN PLUG
1			-16	
9			-18	
1			-20	
2			MS 3180-24	PLUG
1			MS 3181-10	CAP, PROTECTIVE, ELEC CONN RECEP

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— —— DECIMALS +— —— ANGLES +— ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN DATE 30 MAR 65
CHECKED Ed Foster 31 MAR 65
APPROVAL L. E. Hanna 1 APR. 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER SET,
ELECTRICAL CONNECTOR

CODE IDENT NO. 99974
SIZE D
6900001
SCALE —
SHEET 1 OF 1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

H 1000069 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER MXC 205705		11 OCT 65	RLP EF
B		REVISED PER MXC 206514		3 NOV 65	RLP
C		REVISED PER MXC 207002		1 DEC 65	RLP
D		REVISED PER MXC 207904		28 DEC 65	MEM
E		INITIAL RELEASE CLASS A PER TDRR 25864		29 DEC 65	
F		REVISED PER TDRR 27655		6 APR 66	RWH
G		REVISED PER TDRR 29413		14 JUN 66	
H		REVISED PER TDRR 33291		27 MAR 67	JC

-021 COVER P/N	-011 COVER P/N	TO BE USED ON CONNECTOR P/N	REFERENCE DESIGNATION
MS 3181 -10	MS 3181 -10	1010930-014	56J1
MS 3180 -24	MS 3180 -24	1010947-205, 105	56P11, 56P17
MS 3180 -20	MS 3180 -20	1010947-101	56P8
MS 3180 -18	MS 3180 -18	1010929-101, 102, 103, 201, 202, 203, 204, 104	56P5, 56P6, 56P7, 56P10, 56P12 56P13, 56P14, 56P16, 56P18
MS 3180 -16	MS 3180 -16	1010929-206	56P9
MS 3180 -14	MS 3180 -14	1010929-109	56P15
1897432-002	1897377-002	1010965-001, 002	56P21, 56P20
6900059	6900059	6014534	56P4
6900060	6900060	6014533	56P3
6900061	6900061	6014532	56P2
6900062	6900062	6014531	56P1
6900063	6900063	6014535	56P19

-021 COVER P/N	-011 COVER P/N	TO BE USED ON ASSEMBLY NO	REFERENCE DESIGNATION
6900068-011	6900068-011	6007000 (PTA)	35A2J19
6900069-011	6900069-011	N/A (SIG)	30J1
6900070-011	6900070-011	6007200 (PSA)	45J19

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	-			1897432-002	COVER, ELECTRICAL CONNECTOR
1	1			6900070 -011	COVER ASSY, HEADER, PSA
1	1			6900069 -011	COVER ASSY, HEADER, SIG
1	1			6900068 -011	COVER ASSY, HEADER, PTA
1	1			6900059	COVER, ELECTRICAL CONNECTOR
1	1			6900060	
1	1			6900061	
1	1			6900062	
1	1			6900063	
-	2			1897377-002	COVER, ELECTRICAL CONNECTOR
1	1			MS 3180-14	CAP, PROTECTIVE, ELEC CONN PLUG
1	1			-16	
9	9			-18	
1	1			-20	
2	2			MS 3180 -24	PLUG
1	1			MS 3181-10	CAP, PROTECTIVE, ELEC CONN RECEP

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— —— DECIMALS +— —— ANGLES +— ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS.
DRAWN DATE 30 MAR 65
CHECKED Ed Foster 31 MAR 65
APPROVAL L.E. Moore 1 APR. 65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

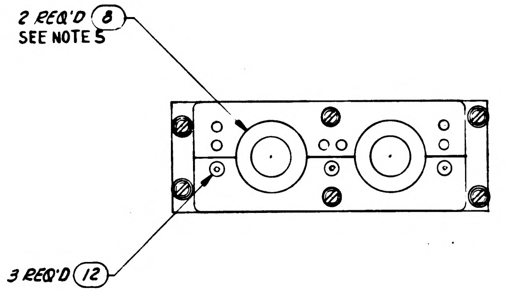
COVER SET,
ELECTRICAL CONNECTOR

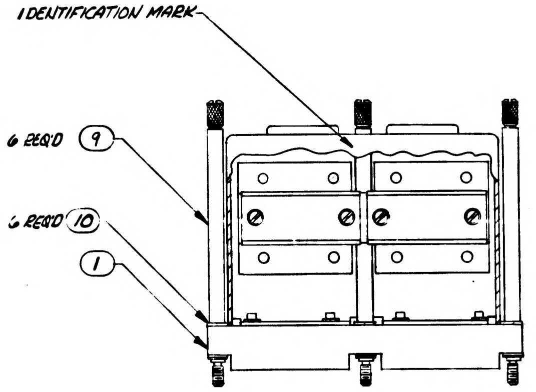
CODE IDENT NO. 99974
SIZE D
6900001
SCALE —
SHEET 1 OF 1

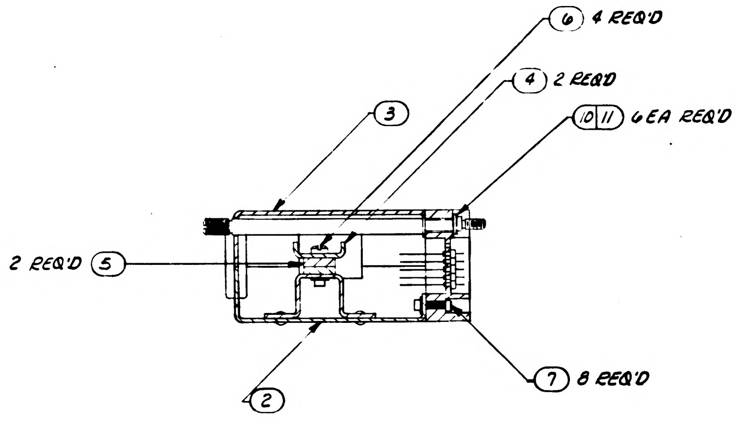
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES-267).
3. BOND ITEM (5) TO ITEM (4) PER ND1002151.
4. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.
5. ITEM (8) TO BE SPLIT PER MS 35489 AT INSTALLATION.

REVISIONS 23392

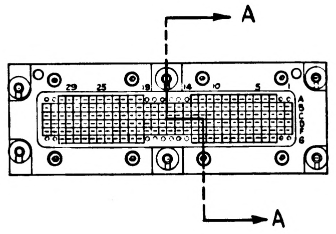
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	REVISED PER D.O. 23930		AUG 65	
	B	REVISED PER MXC 205093		23 SEP 65	
	C	INITIAL RELEASE CLASS A PER TDRR 23392		10 65	







SECTION A-A



				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 4				3		12	1006783-19	SCREW, BUTTON HEAD
				6		11	MS16633-4015	RING, RETAINING E
SEE NOTE 4				12		10	897324-002	WASHER, FLAT
				6		9	2900676-002	SCREW, EXTERNAL RELIEVED BODY
				2		8	MS35489-17	GROMMET, RUBBER
SEE NOTE 4				8		7	1017418-11	SCREW, CAP SOC HD
SEE NOTE 4				4		6	1017429-4	SCREW, SHOULDER
				2		5	2900580-001	GASKET
				2		4	2900711-001	CLAMP, MOVABLE
				1		3	6900014	SHELL, ELEC CONN (ALSEP ASSY)
				1		2	6900013	SHELL, ELEC CONN (ALSEP ASSY)
				1		1	6900012	BASE, ELEC CONN (ALSEP ASSY)

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
2900351-011	2900025-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. J. Fleder DATE 10 AUG 65
CHECKED 13 AUG 65
APPROVAL D. Goss 3 AUG 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONNECTOR, PLUG, ELECTRICAL - 172 PIN

CODE IDENT NO. 99974
SIZE E
6900011
SCALE 1:1
SHEET 1 OF 1

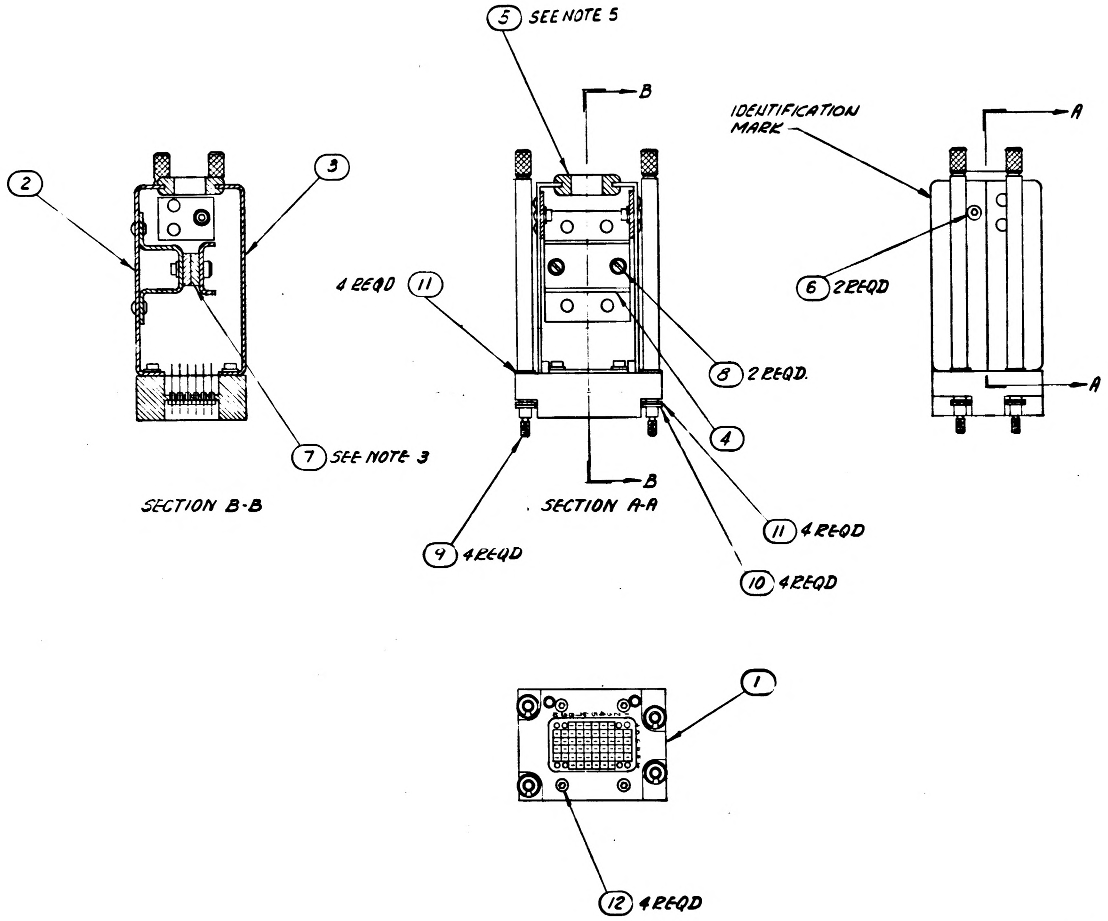
Charleston 13 AUG 65

MIL-10032 B

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130(ES267).
3. BOND ITEM ⑦ TO ITEM ④ PER ND1002151.
4. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.
5. ITEM ⑤ TO BE SPLIT PER MS 35489 AT INSTALLATION.

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED	
	A	REVISED PER DO60930		[illegible] 65	[illegible]	
	B	REVISED PER MXC 205096		23 SEP 65	PHC	
	C	INITIAL RELEASE CLASS A PER TDRR 23807		8 OCT 65	KES	



				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 4				4		12	1017418-11	SCREW, CAP, SOCKET HD.
SEE NOTE 4				8		11	1897324-002	WASHER, PLAIN
				4		10	MS16633-4015	RING, RETAINING E
				4		9	2900676-002	SCREW, EXTERNALLY RELIEVED BODY
SEE NOTE 4				2		8	1017429-4	SCREW, SHOULDER
				1		7	2900580-002	GASKET
SEE NOTE 4				2		6	1006783-19	SCREW, BUTTON HD, HEX SOCKET
				1		5	MS35489-14	GROMMET
				1		4	2900711-002	CLAMP, MOVABLE (INSEP ASSY.)
				1		3	6900018	SHELL, ELEC CONN (INSEP ASSY)
				1		2	6900017	SHELL, ELEC CONN-CLAMP (INSEP ASSY)
				1		1	6900016	BASE, ELEC CONN (INSEP ASSY)

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900006	6900043-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ___ ± ___ ± ___
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN L. [illegible] DATE 10 AUG 1965
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONNECTOR, PLUG, ELECTRICAL - 52 PIN

CODE IDENT NO. 99974
SIZE E
6900015
SCALE 1:1
SHEET

6900015

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130(ES267).

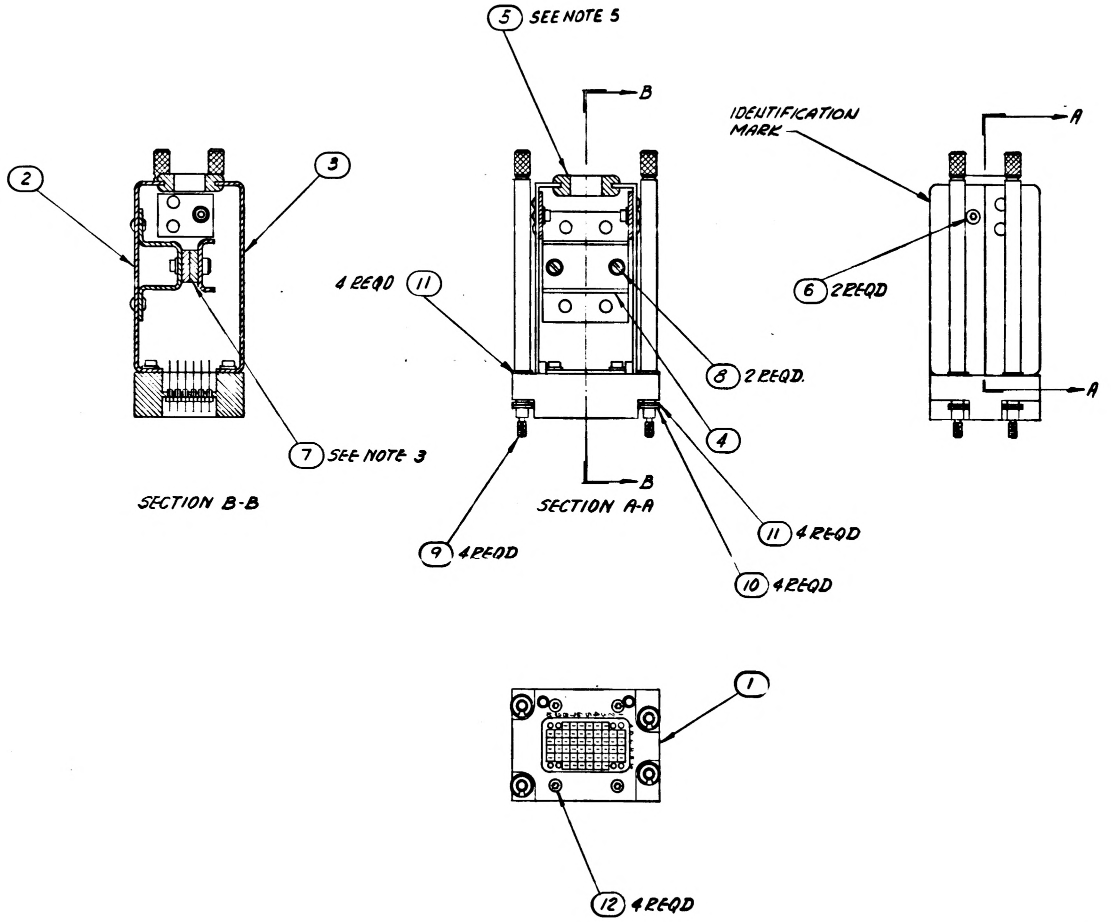
3. BOND ITEM (7) TO ITEM (4) PER ND1002151.

4. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

5. ITEM (5) TO BE SPLIT PER MS 35489 AT INSTALLATION.

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	REVISED PER DO60930			
	B	REVISED PER MXC 205096		23 SEP 65	PHC
	C	INITIAL RELEASE CLASS A PER TDRR 2380		8 OCT 65	KES
	D	REVISED PER TDRR 28993		23 MAY 66	MJ

Ⓜ



					ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 4			4		12	1017418-11	SCREW, CAP SOCKET HD.
SEE NOTE 4			8		11	1897324-002	WASHER, PLAIN
			4		10	MS16633-4015	RING, RETAINING E
			4		9	2900676-002	SCREW, EXTERNALLY RELIEVED BODY
			2		8	2901022-004	SCREW, SHOULDER
			1		7	2900580-002	GASKET
SEE NOTE 4			2		6	1006783-19	SCREW, BUTTON HD, HEX SOCKET
			1		5	MS35489-14	GROMMET
			1		4	2900711-002	CLAMP, MOVABLE (INSEP. ASSY.)
			1		3	6900018	SHELL, ELEC CONN (INSEP ASSY)
			1		2	6900017	SHELL, ELEC CONN-CLAMP (INSEP ASSY)
			1		1	6900016	BASE, ELEC CONN (INSEP ASSY)
QUANTITY REQUIRED			011	EFFECTIVITY	LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900006	6920043-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 13 AUG 1965
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONNECTOR, PLUG, ELECTRICAL - 52 PIN

CODE IDENT NO. 99974
SIZE
6900015
SCALE 1:1
SHEET

13 AUG 65

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	REVISED PER MXC 206234	19 OCT 65	R.W.T. BF
		B	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	WBB CW

Charleston
11 AUG 65

REV STATUS OF SHEETS	REV	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Janowiak DATE 4 AUG 65
CHECKED Moyle 11 AUG 65
APPROVAL E Swanson 11 Aug
APPROVAL Gelman 10/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL W Kupfer 4 Nov 65
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W 143

CODE IDENT NO. 99974
SIZE A
6900025
REV B
SCALE NONE
SHEET 1 OF 14

NOTE GENERAL NOTES

NUMBER DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 DELETED

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.

6 APPLY LEAD IDENTIFICATION TO SLEEVES OF MULTI-LEADS PER ND1002019

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 ITEM 7 FURNISHED WITH ITEMS 3 AND 5, ITEM 6 WITH ITEM 4.

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
A - FROM END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER.
B - TO END SHIELD

11 ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.

12 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

13 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 13 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP

CODE IDENT NO.	SIZE		
99974	A	6900025	
SCALE-NONE	REV LTR ✗B	SHEET 2 OF 14	

NOTE GENERAL NOTES

NUMBER DESCRIPTION

14 SECURE TO CABLE USING ITEM 16. MARKING TO READ AWAY FROM CONNECTOR

15 MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

16 LOCATE IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

17 SERIALIZE PER ND1002023

18 ASSEMBLE PER ND1002032.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				

CODE IDENT NO.	SIZE		
99974	A	6900025	
SCALE-NONE	REV LTR ✗B	SHEET 3 OF 14	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
		1	6900025-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 366 FEET TOTAL LENGTH
	2	1	6900025-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT, 8 FEET TOTAL LENGTH
9	3	1	1897249-003	CONNECTOR PLUG
9	4	1	MS3126F-24-61PY	(1897047-613) CONNECTOR PLUG
9	5	1	1897247-001	CONNECTOR PLUG
9	6		MS3192A-20A	(1896655-020) CONTACT PINS
8	7		1897190- 2	CONTACT, SOCKET
	8		1010958- 1	DELETED
	9		1010763- 3	DELETED
8	10	8	1010490-228	INSULATION SLEEVING, ELECT.
8	11	1	1010490-226	INSULATION SLEEVING, ELECT.
8	12	5	1010763- 2	SOLDER SLEEVE
	13	AR	1901390	FILLER TAPE
8	14	1	1016128-011	BAND, IDENTIFICATION
8	15	3	1016128-041	BAND, IDENTIFICATION
	16	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES2732 NO. 18)

CODE IDENT NO.	SIZE		
99974	A	6900025	
SCALE-NONE	REV LTR ✗B	SHEET 4 OF 14	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900025-003	ZIPPER TUBING PER ND1002155, TYPE III, ZTZ (.003AL), .625 DIA, 12 FT TOTAL LENGTH.
8	18	1	1016282- 24	RUBBER GROMMET
8	19	2	1010933-105	CABLE CLAMP, STRAIGHT
8	20	2	1016282- 18	RUBBER GROMMET

CODE IDENT NO.	SIZE		
99974	A	6900025	
SCALE-NONE	REV LTR ✗B	SHEET 5 OF 14	

6900025 ✗B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 1A			DELETED									
A 1B	2		E1 SHLD A1					.25 .25	NO NO			
A 1L			P1-40 P2-M*					.15 .22	NO NO		7 6	
A 1R			P1-38 P2-K*					.15 .22	NO NO		7 6	
A 2	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 2A			DELETED									
A 2B	2		E1 SHLD A2					.25 .25	NO NO			
A 2L			P1-4 P2-P*					.15 .22	NO NO		7 6	
A 2R			P1-5 P2-N*					.15 .22	NO NO		7 6	
A 3	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 3A			DELETED									

CODE IDENT NO. 99974 | SIZE A | 6900025

SCALE-NONE | REV LTR ✗B | SHEET 6 OF 14

MIL 2074 3-63 WIR

6900025 ✗B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	2		E1 SHLD A3					.25 .25	NO NO			
A 3L			P1-63 P2-R*					.15 .22	NO NO		7 6	
A 3R			P1-62 P2-Q*					.15 .22	NO NO		7 6	
A 4	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 4A			DELETED									
A 4B	2		E1 SHLD A4					.25 .25	NO NO			
A 4L			P1-65 P2-T*					.15 .22	NO NO		7 6	
A 4R			P1-64 P2-S*					.15 .22	NO NO		7 6	
A 5	2		E1 P2-M					.25 .22	NO NO		6	
A 6	2		P1-32 P3-32					.15 .15	NO NO		7 7	
A 7	2		P1-14 P2-NN					.15 .22	NO NO		7 6	
A 8	2		P1-15 P3-15					.15 .15	NO NO		7 7	

CODE IDENT NO. 99974 | SIZE A | 6900025

SCALE-NONE | REV LTR ✗B | SHEET 7 OF 14

MIL 2074 3-63 WIR

6900025 ✗B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 9	2		P1-81 P2-LL					.15 .22	NO NO		7 6	
A 10	2		P1-82 P2-KK					.15 .22	NO NO		7 6	
A 11	2		P1-80 P2-JJ					.15 .22	NO NO		7 6	
A 12	2		P1-35 P2-HH					.15 .22	NO NO		7 6	
A 13	2		P1-59 P2-GG					.15 .22	NO NO		7 6	
A 14	2		P1-58 P2-FF					.15 .22	NO NO		7 6	
A 15	2		P1-36 P2-N					.15 .22	NO NO		7 6	
A 16	2		P1-85 P2-P					.15 .22	NO NO		7 6	
A 17	2		P1-60 P2-R					.15 .22	NO NO		7 6	
A 18	2		P1-37 P2-S					.15 .22	NO NO		7 6	
A 19	2		P1-19 P2-T					.15 .22	NO NO		7 6	
A 20	2		P1-61 P2-U					.15 .22	NO NO		7 6	

CODE IDENT NO. 99974 | SIZE A | 6900025

SCALE-NONE | REV LTR ✗B | SHEET 8 OF 14

MIL 2074 3-63 WIR

6900025 ✗B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 21	2		P1-56 P2-EE					.15 .22	NO NO		7 6	
A 22	2		P1-16 P2-DD					.15 .22	NO NO		7 6	
A 23	2		P1-33 P2-CC					.15 .22	NO NO		7 6	
A 24	2		P1-34 P2-BB					.15 .22	NO NO		7 6	
A 25	2		P1-6 P2-AA					.15 .22	NO NO		7 6	
A 26	2		P1-17 P2-Z*					.15 .22	NO NO		7 6	
A 27	2		P1-54 P2-Y*					.15 .22	NO NO		7 6	
A 28	2		P1-53 P2-X*					.15 .22	NO NO		7 6	
A 29	2		P1-55 P2-W*					.15 .22	NO NO		7 6	
A 30	2		P1-2 P3-2					.15 .15	NO NO		7 7	
A 31	2		P1-9 P3-9					.15 .15	NO NO		7 7	
A 32	2		P1-22 P3-22					.15 .15	NO NO		7 7	

CODE IDENT NO. 99974 | SIZE A | 6900025

SCALE-NONE | REV LTR ✗B | SHEET 9 OF 14

MIL 2074 3-63 WIR

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 33	2		P1-41 P3-41					.15 .15	NO NO		7 7	
A 34	2		P1-66 P3-66					.15 .15	NO NO		7 7	
A 35	2		P1-3 P3-3					.15 .15	NO NO		7 7	
A 36	2		P1-10 P3-10					.15 .15	NO NO		7 7	
A 37	2		P1-23 P3-23					.15 .15	NO NO		7 7	
A 38	2		P1-42 P3-42					.15 .15	NO NO		7 7	
A 39	2		P1-67 P3-67					.15 .15	NO NO		7 7	
A 40	2		P1-12 P3-12					.15 .15	NO NO		7 7	
A 41	2		P1-11 P3-11					.15 .15	NO NO		7 7	
A 42	2		P1-24 P3-24					.15 .15	NO NO		7 7	
A 43	2		P1-43 P3-43					.15 .15	NO NO		7 7	
A 44	2		P1-68 P3-68					.15 .15	NO NO		7 7	

CODE IDENT NO. 99974
SIZE A
6900025
SCALE-NONE
REV LTR B
SHEET 10 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45	2		P1-51 P3-51					.15 .15	NO NO		7 7	
A 46	2		P1-78 P3-78					.15 .15	NO NO		7 7	
A 47	2		P1-77 P3-77					.15 .15	NO NO		7 7	
A 48	2		P1-76 P3-76					.15 .15	NO NO		7 7	
A 49	2		P1-79 P3-79					.15 .15	NO NO		7 7	
A 50	2		P1-49 P3-49					.15 .15	NO NO		7 7	
A 51	2		P1-30 P3-30					.15 .15	NO NO		7 7	
A 52	2		P1-48 P3-48					.15 .15	NO NO		7 7	
A 53	2		P1-28 P3-28					.15 .15	NO NO		7 7	
A 54	2		P1-25 P3-25					.15 .15	NO NO		7 7	
A 55	2		P1-1 P3-1					.15 .15	NO NO		7 7	
A 56	2		P1-21 P3-21					.15 .15	NO NO		7 7	

CODE IDENT NO. 99974
SIZE A
6900025
SCALE-NONE
REV LTR B
SHEET 11 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 57	2		P1-8 P3-8					.15 .15	NO NO		7 7	
A 58	2		P1-83 P3-83					.15 .15	NO NO		7 7	
A 59	2		P1-84 P3-84					.15 .15	NO NO		7 7	
A 60	2		P1-85 P3-31					.15 .15	NO NO		7 7	
A 61	2		P1-57 P3-57					.15 .15	NO NO		7 7	
A 62	2		P1-72 P3-72					.15 .15	NO NO		7 7	
A 63	2		P1-70 P3-70					.15 .15	NO NO		7 7	
A 64	2		P1-26 P3-26					.15 .15	NO NO		7 7	
A 65	2		P1-44 P3-44					.15 .15	NO NO		7 7	
A 66	2		P1-18 P3-18					.15 .15	NO NO		7 7	
A 67	2		P1-69 P3-69					.15 .15	NO NO		7 7	
A 68	2		P1-47 P3-47					.15 .15	NO NO		7 7	

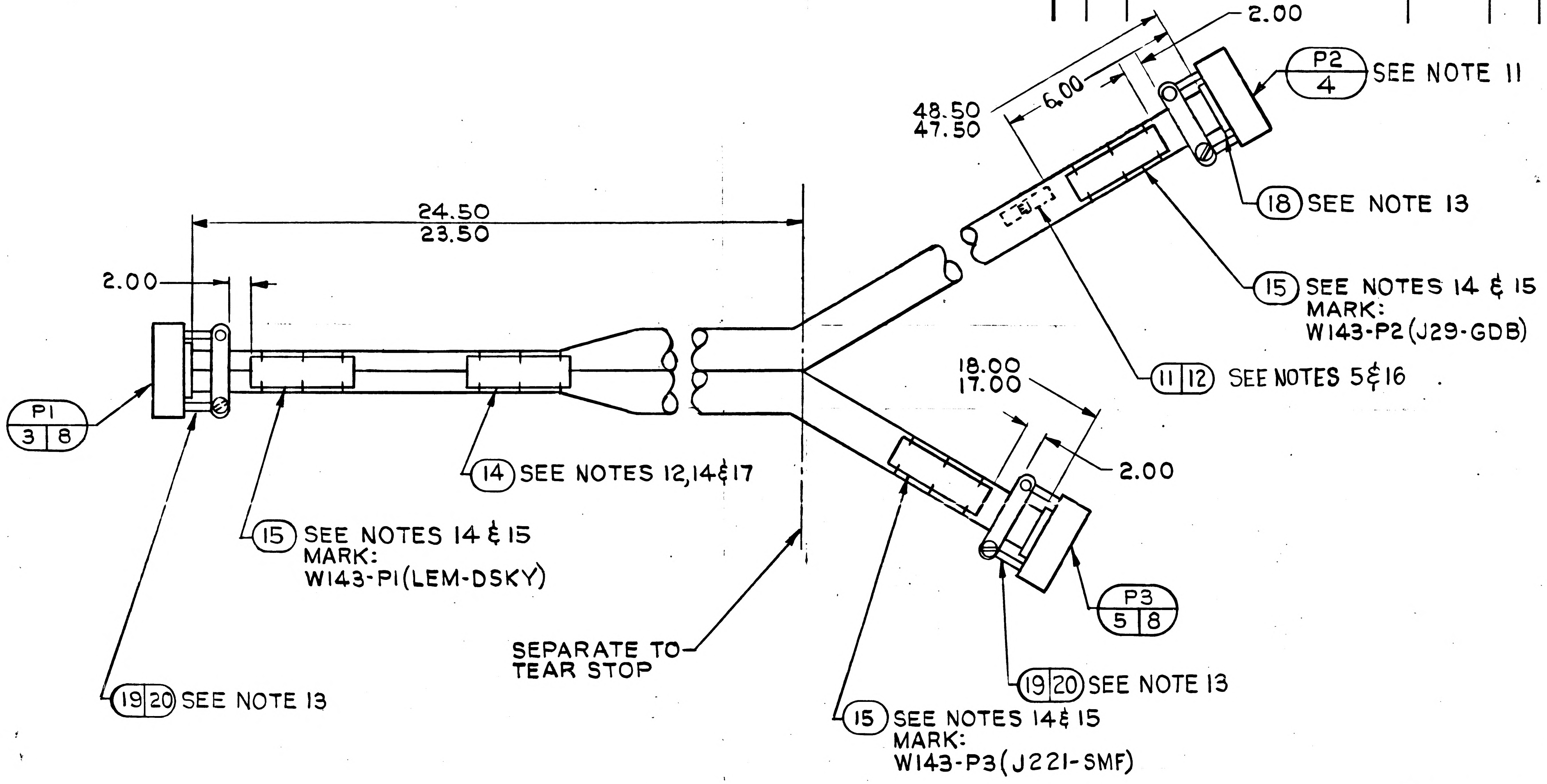
CODE IDENT NO. 99974
SIZE A
6900025
SCALE-NONE
REV LTR B
SHEET 12 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 69	2		P1-46 P3-46					.15 .15	NO NO		7 7	
A 70	2		P1-71 P3-71					.15 .15	NO NO		7 7	
A 71	2		P1-27 P3-27					.15 .15	NO NO		7 7	
A 72	2		P1-45 P3-45					.15 .15	NO NO		7 7	
A 73	2		P1-7 P3-7					.15 .15	NO NO		7 7	
A 74	2		P1-73 P3-73					.15 .15	NO NO		7 7	
A 75	2		P1-75 P3-75					.15 .15	NO NO		7 7	
A 76	2		P1-13 P3-13					.15 .15	NO NO		7 7	
A 77	2		P1-74 P3-74					.15 .15	NO NO		7 7	

CODE IDENT NO. 99974
SIZE A
6900025
SCALE-NONE
REV LTR B
SHEET 13 OF 14

REVISIONS TDRR 23807

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD			



2.00
48.50
47.50
6.00
P2
4
SEE NOTE 11
18 SEE NOTE 13
15 SEE NOTES 14 & 15
MARK:
W143-P2 (J29-GDB)
11 12 SEE NOTES 5 & 16
24.50
23.50
2.00
P1
3 8
14 SEE NOTES 12, 14 & 17
15 SEE NOTES 14 & 15
MARK:
W143-P1 (LEM-DSKY)
18.00
17.00
2.00
P3
5 8
SEPARATE TO TEAR STOP
19 20 SEE NOTE 13
19 20 SEE NOTE 13
15 SEE NOTES 14 & 15
MARK:
W143-P3 (J221-SMF)

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .50 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Janowiak DATE 4 AUG 65
CHECKED Molye 11 AUG 65
APPROVAL E. Swanson 11 Aug '65
APPROVAL Gedunan 10/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W143

CODE IDENT NO. 99974
SIZE C
6900025
SCALE NONE
SHEET 14 OF 14

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	REVISED PER MXC 206234	19 OCT 65	F.W.T. EF
		Ⓜ B	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	JRB CW
		C	REVISED PER TDRR 24169	30 NOV 65	RWH

Charleston
11 AUG 65

REV STATUS OF SHEETS	REV	C	B	C	B	B	B	B	B	B	B	B	C	B	C
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Janowiak DATE 4 AUG 65
CHECKED 11 AUG 65
APPROVAL E. Swanson 11 Aug
APPROVAL 10/26/65

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W143

NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

CODE IDENT NO.	SIZE		REV
99974	A	6900025	C

CONTRACT NAS 9-497

SCALE NONE

SHEET 1 OF 14

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - NC1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	DELETED
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.
6	APPLY LEAD IDENTIFICATION TO SLEEVES OF MULTI-LEADS PER ND1002019
7	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.
8	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
9	ITEM 7 FURNISHED WITH ITEMS 3 AND 5, ITEM 6 WITH ITEM 4.
10	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD L - WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER. B - TO END SHIELD
11	ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.
12	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
13	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 13 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xB	SHEET 2 OF 14

NOTE NUMBER	GENERAL NOTES DESCRIPTION
14	SECURE TO CABLE USING ITEM 16. MARKING TO READ AWAY FROM CONNECTOR. ALIGN CENTER LINES OF BANDS AND MASTER KEY SLOTS TO BE COLINEAR WITHIN + OR - 0.25 INCH.
15	MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE
16	LOCATE IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE
17	SERIALIZE PER ND1002023
18	ASSEMBLE PER ND1002032.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xBC	SHEET 3 OF 14

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900025-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 366 FEET TOTAL LENGTH
	2	1	6900025-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT, 8 FEET TOTAL LENGTH
9	3	1	1897249-003	CONNECTOR PLUG
9	4	1	MS3126F-24-61PY	(1897047-613) CONNECTOR PLUG
9	5	1	1897247-001	CONNECTOR PLUG
9	6		MS3192A-20A	(1896655-020) CONTACT PINS
8	7		1897190- 2	CONTACT, SOCKET
	8		1010958- 1	DELETED
	9		1010763- 3	DELETED
8	10	8	1010490-228	INSULATION SLEEVING, ELECT.
8	11	1	1010490-226	INSULATION SLEEVING, ELECT.
8	12	5	1010763- 2	SOLDER SLEEVE
	13	AR	1901390	FILLER TAPE
8	14	1	1016128-011	BAND, IDENTIFICATION
8	15	3	1016128-041	BAND, IDENTIFICATION
	16	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES2732 NO. 18)

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xB	SHEET 4 OF 14

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900025-003	ZIPPER TUBING PER ND1002155, TYPE III, ZTZ (.003AL), .625 DIA, 12 FT TOTAL LENGTH.
8	18	1	1016282- 24	RUBBER GROMMET
8	19	2	1010933-105	CABLE CLAMP, STRAIGHT
8	20	2	1016282- 18	RUBBER GROMMET

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xB	SHEET 5 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	 SEE NOTE 16
A 1A			DELETED									
A 1B	2		E1 SHLD A1					.25 .25	NO NO			
A 1L			P1-40 P2-M*					.15 .22	NO NO		7 6	
A 1R			P1-38 P2-K*					.15 .22	NO NO		7 6	
A 2	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	 SEE NOTE 16
A 2A			DELETED									
A 2B	2		E1 SHLD A2					.25 .25	NO NO			
A 2L			P1-4 P2-P*					.15 .22	NO NO		7 6	
A 2R			P1-5 P2-N*					.15 .22	NO NO		7 6	
A 3	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	 SEE NOTE 16
A 3A			DELETED									

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xB	SHEET 6 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	2		E1 SHLD A3					.25 .25	NO NO			
A 3L			P1-63 P2-R*					.15 .22	NO NO		7 6	
A 3R			P1-62 P2-Q*					.15 .22	NO NO		7 6	
A 4	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	 SEE NOTE 16
A 4A			DELETED									
A 4B	2		E1 SHLD A4					.25 .25	NO NO			
A 4L			P1-65 P2-T*					.15 .22	NO NO		7 6	
A 4R			P1-64 P2-S*					.15 .22	NO NO		7 6	
A 5	2		E1 P2-M					.25 .22	NO NO		 6	
A 6	2		P1-32 P3-32					.15 .15	NO NO		7 7	
A 7	2		P1-14 P2-NN					.15 .22	NO NO		7 6	
A 8	2		P1-15 P3-15					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xB	SHEET 7 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 9	2		P1-81 P2-LL					.15 .22	NO NO		7 6	
A 10	2		P1-82 P2-KK					.15 .22	NO NO		7 6	
A 11	2		P1-80 P2-JJ					.15 .22	NO NO		7 6	
A 12	2		P1-35 P2-HH					.15 .22	NO NO		7 6	
A 13	2		P1-59 P2-GG					.15 .22	NO NO		7 6	
A 14	2		P1-58 P2-FF					.15 .22	NO NO		7 6	
A 15	2		P1-36 P2-N					.15 .22	NO NO		7 6	
A 16	2		P1-85 P2-P					.15 .22	NO NO		7 6	
A 17	2		P1-60 P2-R					.15 .22	NO NO		7 6	
A 18	2		P1-37 P2-S					.15 .22	NO NO		7 6	
A 19	2		P1-19 P2-T					.15 .22	NO NO		7 6	
A 20	2		P1-61 P2-U					.15 .22	NO NO		7 6	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xB	SHEET 8 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 21	2		P1-56 P2-EE					.15 .22	NO NO		7 6	
A 22	2		P1-16 P2-DD					.15 .22	NO NO		7 6	
A 23	2		P1-33 P2-CC					.15 .22	NO NO		7 6	
A 24	2		P1-34 P2-BB					.15 .22	NO NO		7 6	
A 25	2		P1-6 P2-AA					.15 .22	NO NO		7 6	
A 26	2		P1-17 P2-Z*					.15 .22	NO NO		7 6	
A 27	2		P1-54 P2-Y*					.15 .22	NO NO		7 6	
A 28	2		P1-53 P2-X*					.15 .22	NO NO		7 6	
A 29	2		P1-55 P2-W*					.15 .22	NO NO		7 6	
A 30	2		P1-2 P3-2					.15 .15	NO NO		7 7	
A 31	2		P1-9 P3-9					.15 .15	NO NO		7 7	
A 32	2		P1-22 P3-22					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR xB	SHEET 9 OF 14

6900025 ✗B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 33	2		P1-41 P3-41					.15 .15	NO NO		7 7	
A 34	2		P1-66 P3-66					.15 .15	NO NO		7 7	
A 35	2		P1-3 P3-3					.15 .15	NO NO		7 7	
A 36	2		P1-10 P3-10					.15 .15	NO NO		7 7	
A 37	2		P1-23 P3-23					.15 .15	NO NO		7 7	
A 38	2		P1-42 P3-42					.15 .15	NO NO		7 7	
A 39	2		P1-67 P3-67					.15 .15	NO NO		7 7	
A 40	2		P1-12 P3-12					.15 .15	NO NO		7 7	
A 41	2		P1-11 P3-11					.15 .15	NO NO		7 7	
A 42	2		P1-24 P3-24					.15 .15	NO NO		7 7	
A 43	2		P1-43 P3-43					.15 .15	NO NO		7 7	
A 44	2		P1-68 P3-68					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 10 OF 14

MIL 2074 3-63 WIR

6900025 ✗B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45	2		P1-51 P3-51					.15 .15	NO NO		7 7	
A 46	2		P1-78 P3-78					.15 .15	NO NO		7 7	
A 47	2		P1-77 P3-77					.15 .15	NO NO		7 7	
A 48	2		P1-76 P3-76					.15 .15	NO NO		7 7	
A 49	2		P1-79 P3-79					.15 .15	NO NO		7 7	
A 50	2		P1-49 P3-49					.15 .15	NO NO		7 7	
A 51	2		P1-30 P3-30					.15 .15	NO NO		7 7	
A 52	2		P1-48 P3-48					.15 .15	NO NO		7 7	
A 53	2		P1-28 P3-28					.15 .15	NO NO		7 7	
A 54	2		P1-25 P3-25					.15 .15	NO NO		7 7	
A 55	2		P1-1 P3-1					.15 .15	NO NO		7 7	
A 56	2		P1-21 P3-21					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 11 OF 14

MIL 2074 3-63 WIR

6900025 ✗BC

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 57	2		P1-8 P3-8					.15 .15	NO NO		7 7	
A 58	2		P1-83 P3-83					.15 .15	NO NO		7 7	
A 59	2		P1-84 P3-84					.15 .15	NO NO		7 7	
A 60	2		P1-~~85~~ 60 P3-31					.15 .15	NO NO		7 7	
A 61	2		P1-57 P3-57					.15 .15	NO NO		7 7	
A 62	2		P1-72 P3-72					.15 .15	NO NO		7 7	
A 63	2		P1-70 P3-70					.15 .15	NO NO		7 7	
A 64	2		P1-26 P3-26					.15 .15	NO NO		7 7	
A 65	2		P1-44 P3-44					.15 .15	NO NO		7 7	
A 66	2		P1-18 P3-18					.15 .15	NO NO		7 7	
A 67	2		P1-69 P3-69					.15 .15	NO NO		7 7	
A 68	2		P1-47 P3-47					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗BC	SHEET 12 OF 14

MIL 2074 3-63 WIR

6900025 ✗B

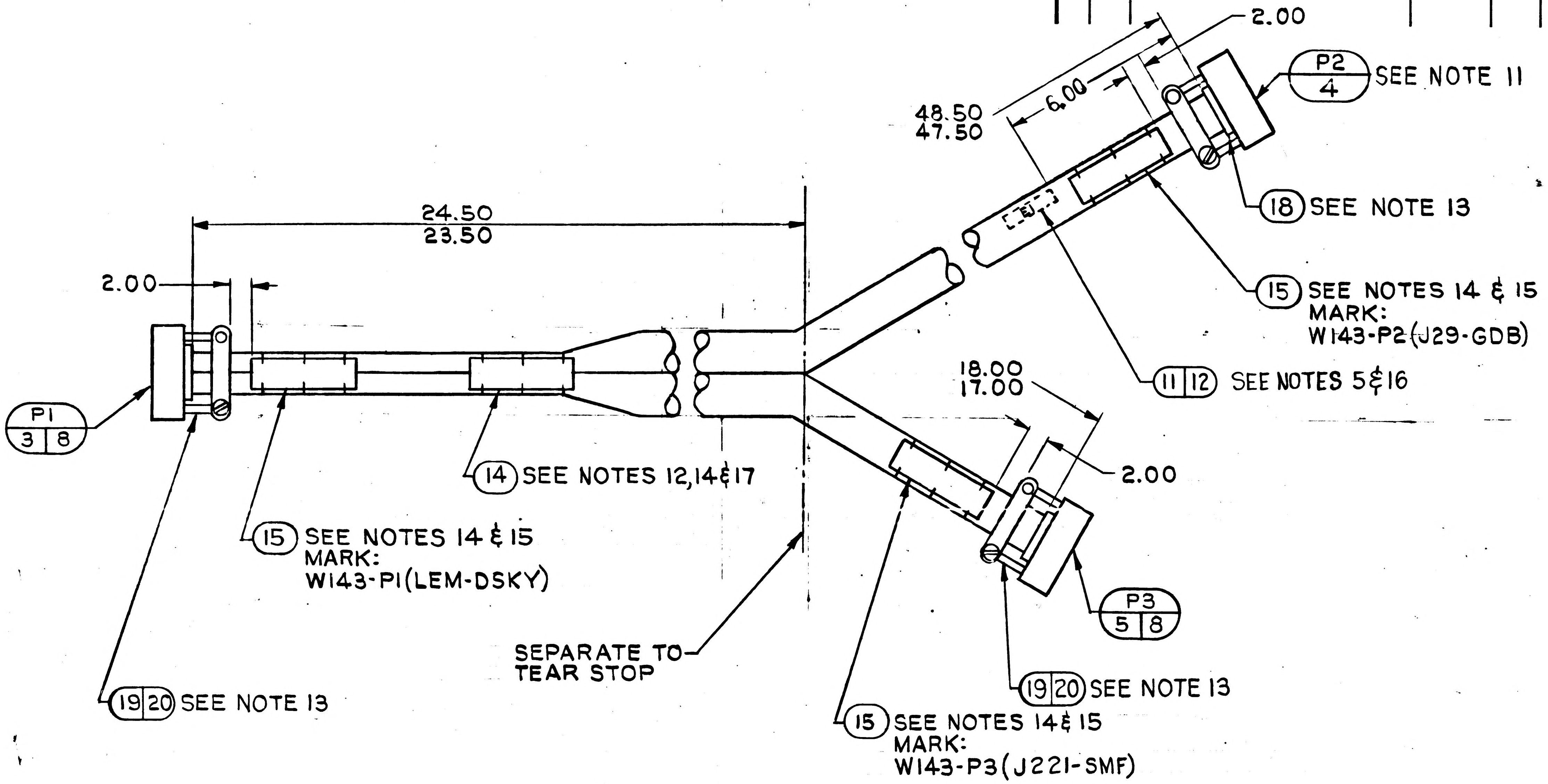
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 69	2		P1-46 P3-46					.15 .15	NO NO		7 7	
A 70	2		P1-71 P3-71					.15 .15	NO NO		7 7	
A 71	2		P1-27 P3-27					.15 .15	NO NO		7 7	
A 72	2		P1-45 P3-45					.15 .15	NO NO		7 7	
A 73	2		P1-7 P3-7					.15 .15	NO NO		7 7	
A 74	2		P1-73 P3-73					.15 .15	NO NO		7 7	
A 75	2		P1-75 P3-75					.15 .15	NO NO		7 7	
A 76	2		P1-13 P3-13					.15 .15	NO NO		7 7	
A 77	2		P1-74 P3-74					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 13 OF 14

MIL 2074 3-63 WIR

REVISIONS TDRR 23807

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
ⓜ		SEE SHEET 1 FOR REVISION RECORD			



2.00
P2
4
SEE NOTE 11
48.50
47.50
6.00
18 SEE NOTE 13
15 SEE NOTES 14 & 15
MARK:
W143-P2(J29-GDB)
11 12 SEE NOTES 5&16
24.50
23.50
2.00
P1
3 8
18.00
17.00
2.00
14 SEE NOTES 12,14&17
15 SEE NOTES 14 & 15
MARK:
W143-P1(LEM-DSKY)
SEPARATE TO
TEAR STOP
P3
5 8
19 20 SEE NOTE 13
19 20 SEE NOTE 13
15 SEE NOTES 14& 15
MARK:
W143-P3(J221-SMF)

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.50 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Janowiak DATE 4 AUG 65
CHECKED Molye 11 AUG 65
APPROVAL E. Swanson 11 Aug '65
APPROVAL C. Jedeman 10/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W143

CODE IDENT NO. 99974
SIZE C
6900025
SCALE NONE
SHEET 14 OF 14

MIL 1077C—P

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	REVISED PER MXC 20C234	19 OCT 65	R.W.T. EF
		Ⓜ B	INITIAL RELEASE CLASS A PER TDRR 23507	20 OCT 65	WRB CW
		Ⓜ C	REVISED PER TDRR 24169	30 NOV 65	IK RWH
		D	REVISED PER TDRR 24878	29 DEC 65	IMP MEM

Charleston
11 AUG 65

REV														
SHEET														
REV STATUS OF SHEETS REV	D	B	C	B	B	B	B	B	B	B	B	D	B	B
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Janowiak DATE 4 AUG 65
CHECKED Mogge 11 AUG 65
APPROVAL E Swanson 11 Aug
APPROVAL 10/26/65

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W143

NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

CODE IDENT NO.	SIZE		REV
99974	A	6900025	D

CONTRACT NAS 9-497

SCALE NONE

SHEET 1 OF 14

NOTE NUMBER | GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 DELETED

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.

6 APPLY LEAD IDENTIFICATION TO SLEEVES OF MULTI-LEADS PER ND1002019

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 ITEM 7 FURNISHED WITH ITEMS 3 AND 5, ITEM 6 WITH ITEM 4.

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
A - FROM END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER.
B - TO END SHIELD

11 ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.

12 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

13 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 13 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR *B	SHEET 2 OF 14

NOTE NUMBER | GENERAL NOTES DESCRIPTION

14 SECURE TO CABLE USING ITEM 16. MARKING TO READ AWAY FROM CONNECTOR. ALIGN CENTER LINES OF BANDS AND MASTER KEY SLOTS TO BE COLINEAR WITHIN + OR - 0.25 INCH.

15 MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

16 LOCATE IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

17 SERIALIZE PER ND1002023

18 ASSEMBLE PER ND1002032.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR *~~B~~C	SHEET 3 OF 14

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900025-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 366 FEET TOTAL LENGTH
	2	1	6900025-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT, 8 FEET TOTAL LENGTH
9	3	1	1897249-003	CONNECTOR PLUG
9	4	1	MS3126F-24-61PY	(1897047-613) CONNECTOR PLUG
9	5	1	1897247-001	CONNECTOR PLUG
9	6		MS3192A-20A	(1896655-020) CONTACT PINS
8	7		1897190- 2	CONTACT, SOCKET
	8		1010958- 1	DELETED
	9		1010763- 3	DELETED
8	10	8	1010490-228	INSULATION SLEEVING, ELECT.
8	11	1	1010490-226	INSULATION SLEEVING, ELECT.
8	12	5	1010763- 2	SOLDER SLEEVE
	13	AR	1901390	FILLER TAPE
8	14	1	1016128-011	BAND, IDENTIFICATION
8	15	3	1016128-041	BAND, IDENTIFICATION
	16	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES2732 NO. 18).

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR *B	SHEET 4 OF 14

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900025-003	ZIPPER TUBING PER ND1002155, TYPE III, ZTZ (.003AL), .625 DIA, 12 FT TOTAL LENGTH.
8	18	1	1016282- 24	RUBBER GROMMET
8	19	2	1010933-105	CABLE CLAMP, STRAIGHT
8	20	2	1016282- 18	RUBBER GROMMET

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR *B	SHEET 5 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 1A			DELETED									
A 1B	2		E1 SHLD A1					.25 .25	NO NO			
A 1L			P1-40 P2-M*					.15 .22	NO NO		7 6	
A 1R			P1-38 P2-K*					.15 .22	NO NO		7 6	
A 2	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 2A			DELETED									
A 2B	2		E1 SHLD A2					.25 .25	NO NO			
A 2L			P1-4 P2-P*					.15 .22	NO NO		7 6	
A 2R			P1-5 P2-N*					.15 .22	NO NO		7 6	
A 3	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 3A			DELETED									

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 6 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	2		E1 SHLD A3					.25 .25	NO NO			
A 3L			P1-63 P2-R*					.15 .22	NO NO		7 6	
A 3R			P1-62 P2-Q*					.15 .22	NO NO		7 6	
A 4	1				2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A 4A			DELETED									
A 4B	2		E1 SHLD A4					.25 .25	NO NO			
A 4L			P1-65 P2-T*					.15 .22	NO NO		7 6	
A 4R			P1-64 P2-S*					.15 .22	NO NO		7 6	
A 5	2		E1 P2-M					.25 .22	NO NO		 6	
A 6	2		P1-32 P3-32					.15 .15	NO NO		7 7	
A 7	2		P1-14 P2-NN					.15 .22	NO NO		7 6	
A 8	2		P1-15 P3-15					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 7 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 9	2		P1-81 P2-LL					.15 .22	NO NO		7 6	
A 10	2		P1-82 P2-KK					.15 .22	NO NO		7 6	
A 11	2		P1-80 P2-JJ					.15 .22	NO NO		7 6	
A 12	2		P1-35 P2-HH					.15 .22	NO NO		7 6	
A 13	2		P1-59 P2-GG					.15 .22	NO NO		7 6	
A 14	2		P1-58 P2-FF					.15 .22	NO NO		7 6	
A 15	2		P1-36 P2-N					.15 .22	NO NO		7 6	
A 16	2		P1-85 P2-P					.15 .22	NO NO		7 6	
A 17	2		P1-60 P2-R					.15 .22	NO NO		7 6	
A 18	2		P1-37 P2-S					.15 .22	NO NO		7 6	
A 19	2		P1-19 P2-T					.15 .22	NO NO		7 6	
A 20	2		P1-61 P2-U					.15 .22	NO NO		7 6	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 8 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 21	2		P1-56 P2-EE					.15 .22	NO NO		7 6	
A 22	2		P1-16 P2-DD					.15 .22	NO NO		7 6	
A 23	2		P1-33 P2-CC					.15 .22	NO NO		7 6	
A 24	2		P1-34 P2-BB					.15 .22	NO NO		7 6	
A 25	2		P1-6 P2-AA					.15 .22	NO NO		7 6	
A 26	2		P1-17 P2-Z*					.15 .22	NO NO		7 6	
A 27	2		P1-54 P2-Y*					.15 .22	NO NO		7 6	
A 28	2		P1-53 P2-X*					.15 .22	NO NO		7 6	
A 29	2		P1-55 P2-W*					.15 .22	NO NO		7 6	
A 30	2		P1-2 P3-2					.15 .15	NO NO		7 7	
A 31	2		P1-9 P3-9					.15 .15	NO NO		7 7	
A 32	2		P1-22 P3-22					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 9 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 33	2		P1-41 P3-41					.15 .15	NO NO		7 7	
A 34	2		P1-66 P3-66					.15 .15	NO NO		7 7	
A 35	2		P1-3 P3-3					.15 .15	NO NO		7 7	
A 36	2		P1-10 P3-10					.15 .15	NO NO		7 7	
A 37	2		P1-23 P3-23					.15 .15	NO NO		7 7	
A 38	2		P1-42 P3-42					.15 .15	NO NO		7 7	
A 39	2		P1-67 P3-67					.15 .15	NO NO		7 7	
A 40	2		P1-12 P3-12					.15 .15	NO NO		7 7	
A 41	2		P1-11 P3-11					.15 .15	NO NO		7 7	
A 42	2		P1-24 P3-24					.15 .15	NO NO		7 7	
A 43	2		P1-43 P3-43					.15 .15	NO NO		7 7	
A 44	2		P1-68 P3-68					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 10 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45	2		P1-51 P3-51					.15 .15	NO NO		7 7	
A 46	2		P1-78 P3-78					.15 .15	NO NO		7 7	
A 47	2		P1-77 P3-77					.15 .15	NO NO		7 7	
A 48	2		P1-76 P3-76					.15 .15	NO NO		7 7	
A 49	2		P1-79 P3-79					.15 .15	NO NO		7 7	
A 50	2		P1-49 P3-49					.15 .15	NO NO		7 7	
A 51	2		P1-30 P3-30					.15 .15	NO NO		7 7	
A 52	2		P1-48 P3-48					.15 .15	NO NO		7 7	
A 53	2		P1-28 P3-28					.15 .15	NO NO		7 7	
A 54	2		P1-25 P3-25					.15 .15	NO NO		7 7	
A 55	2		P1-1 P3-1					.15 .15	NO NO		7 7	
A 56	2		P1-21 P3-21					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 11 OF 14

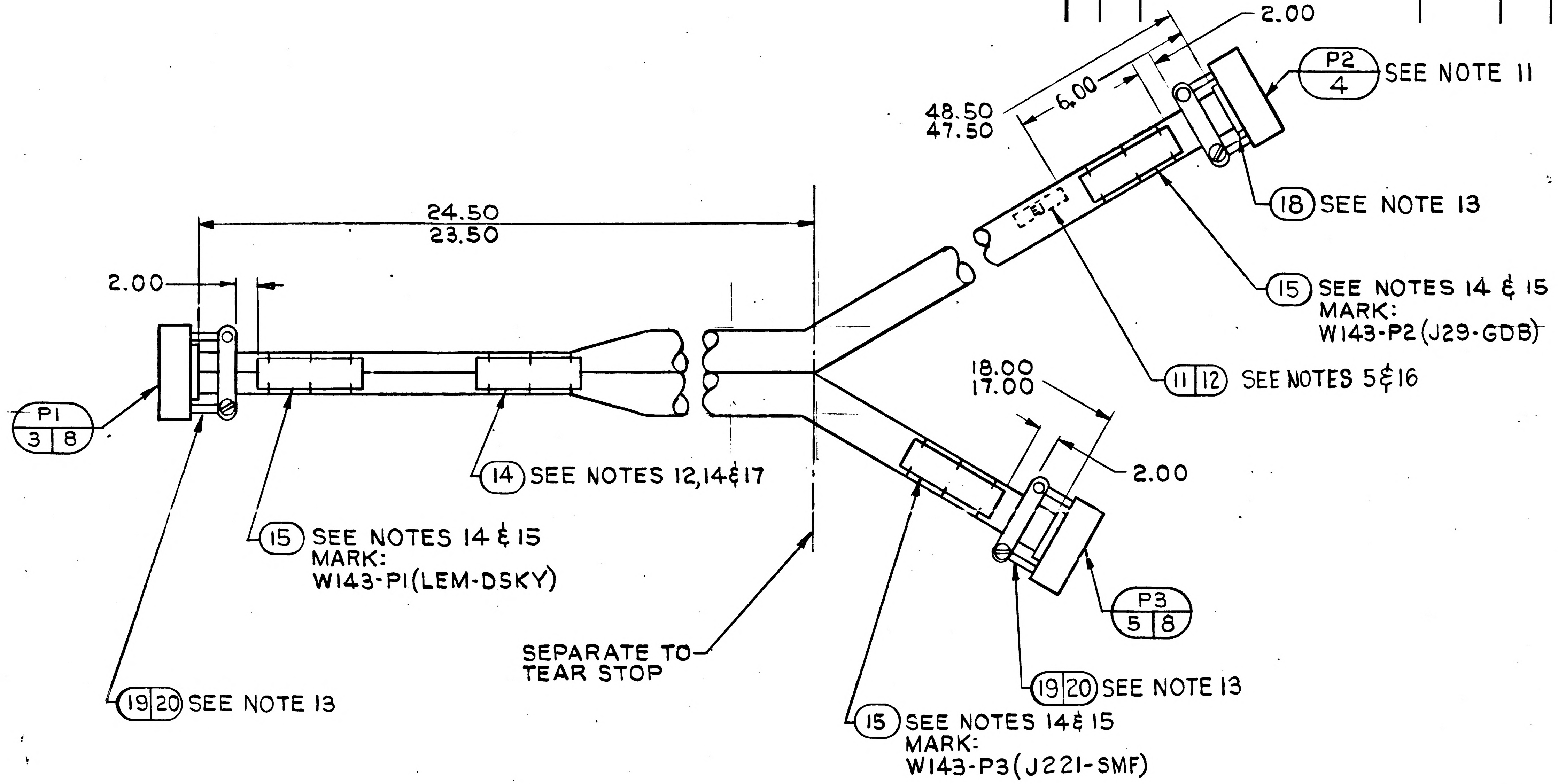
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 57	2		P1-8 P3-8					.15 .15	NO NO		7 7	
A 58	2		P1-83 P3-83					.15 .15	NO NO		7 7	
A 59	2		P1-84 P3-84					.15 .15	NO NO		7 7	
A 60	2		P1-~~60~~ ~~85~~ 31 P3-31					.15 .15	NO NO		7 7	
A 61	2		P1-57 P3-57					.15 .15	NO NO		7 7	
A 62	2		P1-72 P3-72					.15 .15	NO NO		7 7	
A 63	2		P1-70 P3-70					.15 .15	NO NO		7 7	
A 64	2		P1-26 P3-26					.15 .15	NO NO		7 7	
A 65	2		P1-44 P3-44					.15 .15	NO NO		7 7	
A 66	2		P1-18 P3-18					.15 .15	NO NO		7 7	
A 67	2		P1-69 P3-69					.15 .15	NO NO		7 7	
A 68	2		P1-47 P3-47					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗BC	SHEET 12 OF 14

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 69	2		P1-46 P3-46					.15 .15	NO NO		7 7	
A 70	2		P1-71 P3-71					.15 .15	NO NO		7 7	
A 71	2		P1-27 P3-27					.15 .15	NO NO		7 7	
A 72	2		P1-45 P3-45					.15 .15	NO NO		7 7	
A 73	2		P1-7 P3-7					.15 .15	NO NO		7 7	
A 74	2		P1-73 P3-73					.15 .15	NO NO		7 7	
A 75	2		P1-75 P3-75					.15 .15	NO NO		7 7	
A 76	2		P1-13 P3-13					.15 .15	NO NO		7 7	
A 77	2		P1-74 P3-74					.15 .15	NO NO		7 7	

CODE IDENT NO.	SIZE	
99974	A	6900025
SCALE-NONE	REV LTR ✗B	SHEET 13 OF 14

REVISIONS TDRR 23807					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ		SEE SHEET 1 FOR REVISION RECORD			



2.00
48.50
47.50
6.00
P2 4
SEE NOTE 11
18 SEE NOTE 13
15 SEE NOTES 14 & 15
MARK:
W143-P2 (J29-GDB)
11 12 SEE NOTES 5 & 16
24.50
23.50
2.00
P1 3 8
18.00
17.00
2.00
14 SEE NOTES 12, 14 & 17
15 SEE NOTES 14 & 15
MARK:
W143-P1 (LEM-DSKY)
SEPARATE TO TEAR STOP
19 20 SEE NOTE 13
P3 5 8
19 20 SEE NOTE 13
15 SEE NOTES 14 & 15
MARK:
W143-P3 (J221-SMF)

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
±	± .50	±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

		DATE
DRAWN	Janowiak	4 AUG 65
CHECKED	Molye	11 AUG 65
APPROVAL	E. Swanson	11 Aug '65
APPROVAL	Gedman	10/26/65

NASA APPROVAL A. C. METZGER

MIT APPROVAL 4 NOV 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W143

CODE IDENT NO.	SIZE	
99974	C	6900025
SCALE NONE		SHEET 14 OF 14

APPLICATION	
NEXT ASSY	USED ON
6900043-011	1900030

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER MXC 206234	19 OCT 65	R.Y.T. EF
(M) B	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	CW
(M) C	REVISED PER TDRR 24169	30 NOV 65	LK
(M) D	REVISED PER TDRR 24878	29 DEC 65	Jim P. RWH MEM
E	REVISED PER TDRR 25720	7 FEB 66	RLP

11 AUG 65

REV STATUS OF SHEETS																	
REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Janowiak DATE 4 AUG 65
CHECKED Moyle 11 AUG 65
APPROVAL E. Swanson 11 Aug
APPROVAL 10/26/65

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W143

NASA APPROVAL A. C. ME
MIT APPROVAL 4 Nov 65
CONTRACT NAS 9-497

CODE IDENT NO. 99974
SIZE A
6900025
REV E
SCALE NONE
SHEET 1 OF 16

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-C-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	DELETED
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.
6	APPLY LEAD IDENTIFICATION TO SLEEVES OF MULTI-LEADS PER ND1002019
7	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.
8	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
9	ITEM 7 FURNISHED WITH ITEMS 3 AND 5, ITEM 6 WITH ITEM 4.
10	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD L - WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER. B - TO END SHIELD
11	ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.
12	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
13	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 13 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP

SIZE A	CODE IDENT NO 99974	6900025
SCALE-NONE	REV LTR E	SHEET 2 OF 16

NOTE NUMBER	GENERAL NOTES DESCRIPTION
14	SECURE TO CABLE USING ITEM 16. MARKING TO READ AWAY FROM CONNECTOR ALIGN CENTER LINES OF BANDS AND MASTER KEY SLOTS TO BE COLINEAR WITHIN + OR - 0.25 INCH.
15	MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE
16	LOCATE IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE
17	SERIALIZE PER ND1002023
18	ASSEMBLE PER ND1002032.
19	SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE IN E2-B, E3-B, E5-B AND E7-B RESPECTIVELY.
20	ZIPPER TUBING SHALL HAVE -Z- TYPE TRACK, WITH .003 + OR - .001 THICKNESS ALUMINUM FOIL.

SIZE A	CODE IDENT NO 99974	6900025
SCALE-NONE	REV LTR E	SHEET 3 OF 16

NOTE NUMBER — GENERAL NOTES DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				

SIZE A	CODE IDENT NO 99974	6900025
SCALE-NONE	REV LTR E	SHEET 4 OF 16

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900025-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 26 FEET TOTAL LENGTH
	2	1	6900025-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT, 305 FEET TOTAL LENGTH
9	3	1	1897249-003	CONNECTOR PLUG
9	4	1	MS3126F-24-61PY	(1897047-613) CONNECTOR PLUG
9	5	1	1897247-001	CONNECTOR PLUG
9	6		MS3192A-20A	(1896655-020) CONTACT PINS
8	7		1897190- 2	CONTACT, SOCKET
	8		1010958- 1	DELETED
	9		1010763- 3	DELETED
8	10	10	1010490-228	INSULATION SLEEVING, ELECT.
8	11	1	1010490-226	INSULATION SLEEVING, ELECT.
8	12	5	1010763- 2	SOLDER SLEEVE
	13	AR	1901390	FILLER TAPE
8	14	1	1016128-011	BAND, IDENTIFICATION
8	15	3	1016128-041	BAND, IDENTIFICATION
	16	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES2732 NO. 18)

SIZE A	CODE IDENT NO 99974	6900025
SCALE-NONE	REV LTR E	SHEET 5 OF 16

CABLE ASSEMBLY W143 6900025 E

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
			LIST OF MATERIALS	
20	17	1	6900025-003	ZIPPER TUBING PER ND1002155, TYPE III, .625 DIA, 12 FT TOTAL LENGTH.
8	18	1	1016282- 24	RUBBER GROMMET
8	19	2	1010933-105	CABLE CLAMP, STRAIGHT
8	20	2	1016282- 18	RUBBER GROMMET
8	21	1	1015902- 45	TERMINAL, LUG
8	22	4	1016006-002	SPLICE REDUCER
8	23	4	1010490-258	INSULATION, SLEEVING
8	24	1	1010490-232	INSULATION, SLEEVING
8	25	2	1015902- 49	TERMINAL, LUG
	26	1	6900025-004	WIRE, ND1002181, TYPE 1, CLASS 1, 20 AWG, WHT, 16 INCHES TOTAL LENGTH

SIZE	CODE IDENT NO			
A	99974	6900025		
SCALE-NONE	REV LTR	E	SHEET 6 OF 16	

CABLE ASSEMBLY W143 6900025 E

LEAC IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1			2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A	1A		DELETED									
A	1B	2-	E1 SHLD A1					.25 .25	NO NO			
A	1L		P1-40 P2-M*					.15 .22	NO NO		7 6	
A	1R		P1-38 P2-K*					.15 .22	NO NO		7 6	
A	2	1			2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A	2A		DELETED									
A	2B	2	E1 SHLD A2					.25 .25	NO NO			
A	2L		P1-4 P2-P*					.15 .22	NO NO		7 6	
A	2R		P1-5 P2-N*					.15 .22	NO NO		7 6	
A	3	1			2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A	3A		DELETED									

SIZE	CODE IDENT NO			
A	99974	6900025		
SCALE-NONE	REV LTR	E	SHEET 7 OF 16	

CABLE ASSEMBLY W143 6900025 E

LEAC IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	3B	2	E1 SHLD A3					.25 .25	NO NO			
A	3L		P1-63 P2-R*					.15 .22	NO NO		7 6	
A	3R		P1-62 P2-C*					.15 .22	NO NO		7 6	
A	4	1			2.30 2.30	2.00 2.00				B,7 A,6A	10 12, 10	SEE NOTE 16
A	4A		DELETED									
A	4B	2	E1 SHLD A4					.25 .25	NO NO			
A	4L		P1-65 P2-T*					.15 .22	NO NO		7 6	
A	4R		P1-64 P2-S*					.15 .22	NO NO		7 6	
A	5	2	E1 P2-M					.25 .22	NO NO		 6	
A	6	2	P1-32 P3-32					.15 .15	NO NO		7 7	
A	7		DELETED									
A	8	2	P1-14 P1-14					.15 .15	NO NO		7 7	

SIZE	CODE IDENT NO			
A	99974	6900025		
SCALE-NONE	REV LTR	E	SHEET 8 OF 16	

CABLE ASSEMBLY W143 6900025 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	9	2	P1-81 P2-LL					.15 .22	NO NO		7 6	
A	10	2	P1-82 P2-KK					.15 .22	NO NO		7 6	
A	11	2	P1-80 P2-JJ					.15 .22	NO NO		7 6	
A	12	2	P1-35 P2-HH					.15 .22	NO NO		7 6	
A	13	2	P1-59 P2-GG					.15 .22	NO NO		7 6	
A	14	2	P1-58 P2-FF					.15 .22	NO NO		7 6	
A	15	2	P1-36 P2-N					.15 .22	NO NO		7 6	
A	16	2	P1-85 P2-P					.15 .22	NO NO		7 6	
A	17	2	P1-60 P2-R					.15 .22	NO NO		7 6	
A	18	2	P1-37 P2-S					.15 .22	NO NO		7 6	
A	19	2	P1-19 P2-T					.15 .22	NO NO		7 6	
A	20	2	P1-61 P2-U					.15 .22	NO NO		7 6	

SIZE	CODE IDENT NO			
A	99974	6900025		
SCALE-NONE	REV LTR	E	SHEET 9 OF 16	

CABLE ASSEMBLY W143 6900025 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 21	2		P1-56 P2-EE					.15 .22	NO NO		7 6	
A 22	2		P1-16 P2-DD					.15 .22	NO NO		7 6	
A 23	2		P1-33 P2-CC					.15 .22	NO NO		7 6	
A 24	2		P1-34 P2-BB					.15 .22	NO NO		7 6	
A 25	2		P1-6 P2-AA					.15 .22	NO NO		7 6	
A 26	2		P1-17 P2-Z•					.15 .22	NO NO		7 6	
A 27	2		P1-54 P2-Y•					.15 .22	NO NO		7 6	
A 28	2		P1-53 P2-X•					.15 .22	NO NO		7 6	
A 29	2		P1-55 P2-W•					.15 .22	NO NO		7 6	
A 30	2		P1-2 P3-2					.15 .15	NO NO		7 7	
A 31	2		P1-9 P3-9					.15 .15	NO NO		7 7	
A 32	2		P1-22 P3-22					.15 .15	NO NO		7 7	

SIZE A
CODE IDENT NO. 99974
6900025
SCALE:NONE REV LTR E SHEET 10 OF 16

CABLE ASSEMBLY W143 6900025 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 33	2		P1-41 P3-41					.15 .15	NO NO		7 7	
A 34	2		P1-66 P3-66					.15 .15	NO NO		7 7	
A 35	2		P1-3 P3-3					.15 .15	NO NO		7 7	
A 36	2		P1-10 P3-10					.15 .15	NO NO		7 7	
A 37	2		P1-23 P3-23					.15 .15	NO NO		7 7	
A 38	2		P1-42 P3-42					.15 .15	NO NO		7 7	
A 39	2		P1-67 P3-67					.15 .15	NO NO		7 7	
A 40	2		P1-12 P3-12					.15 .15	NO NO		7 7	
A 41	2		P1-11 P3-11					.15 .15	NO NO		7 7	
A 42	2		P1-24 P3-24					.15 .15	NO NO		7 7	
A 43	2		P1-43 P3-43					.15 .15	NO NO		7 7	
A 44	2		P1-68 P3-68					.15 .15	NO NO		7 7	

SIZE A
CODE IDENT NO. 99974
6900025
SCALE:NONE REV LTR E SHEET 11 OF 16

CABLE ASSEMBLY W143 6900025 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45	2		P1-51 P3-51					.15 .15	NO NO		7 7	
A 46	2		P1-78 P3-78					.15 .15	NO NO		7 7	
A 47	2		P1-77 P3-77					.15 .15	NO NO		7 7	
A 48	2		P1-76 P3-76					.15 .15	NO NO		7 7	
A 49	2		P1-79 P3-79					.15 .15	NO NO		7 7	
A 50	2		P1-49 P3-49					.15 .15	NO NO		7 7	
A 51	2		P1-30 P3-30					.15 .15	NO NO		7 7	
A 52	2		P1-48 P3-48					.15 .15	NO NO		7 7	
A 53	2		P1-28 P3-28					.15 .15	NO NO		7 7	
A 54	2		P1-25 P3-25					.15 .15	NO NO		7 7	
A 55	2		P1-1 P3-1					.15 .15	NO NO		7 7	
A 56	2		P1-21 P3-21					.15 .15	NO NO		7 7	

SIZE A
CODE IDENT NO. 99974
6900025
SCALE:NONE REV LTR E SHEET 12 OF 16

CABLE ASSEMBLY W143 6900025 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 57	2		P1-8 P3-8					.15 .15	NO NO		7 7	
A 58	2		P1-83 P3-83					.15 .15	NO NO		7 7	
A 59	2		P1-84 P3-84					.15 .15	NO NO		7 7	
A 60	2		P1-31 P3-31					.15 .15	NO NO		7 7	
A 61	2		P1-57 P3-57					.15 .15	NO NO		7 7	
A 62	2		P1-72 P3-72					.15 .15	NO NO		7 7	
A 63	2		P1-70 P3-70					.15 .15	NO NO		7 7	
A 64	2		P1-26 P3-26					.15 .15	NO NO		7 7	
A 65	2		P1-44 P3-44					.15 .15	NO NO		7 7	
A 66	2		P1-18 P3-18					.15 .15	NO NO		7 7	
A 67	2		P1-69 P3-69					.15 .15	NO NO		7 7	
A 68	2		P1-47 P3-47					.15 .15	NO NO		7 7	

SIZE A
CODE IDENT NO. 99974
6900025
SCALE:NONE REV LTR E SHEET 13 OF 16

CABLE ASSEMBLY W143 6900025 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 69	2		P1-46					.15	NO		7	
			P3-46					.15	NO		7	
A 70	2		P1-71					.15	NO		7	
			P3-71					.15	NO		7	
A 71	2		P1-27					.15	NO		7	
			P3-27					.15	NO		7	
A 72	2		P1-45					.15	NO		7	
			P3-45					.15	NO		7	
A 73	2		P1-7					.15	NO		7	
			P3-7					.15	NO		7	
A 74	2		P1-73					.15	NO		7	
			P3-73					.15	NO		7	
A 75	2		P1-75					.15	NO		7	
			P3-75					.15	NO		7	
A 76	2		P1-13					.15	NO		7	
			P3-13					.15	NO		7	
A 77	2		P1-74					.15	NO		7	
			P3-74					.15	NO		7	
A 78	2		E2-BB					.38	NO			
			E4					.16	NO			
A 79	2		E3-BB					.38	NO			
			E4					.16	NO			
A 80	26		E7-BB					.38	NO			
			E8					.16	NO			

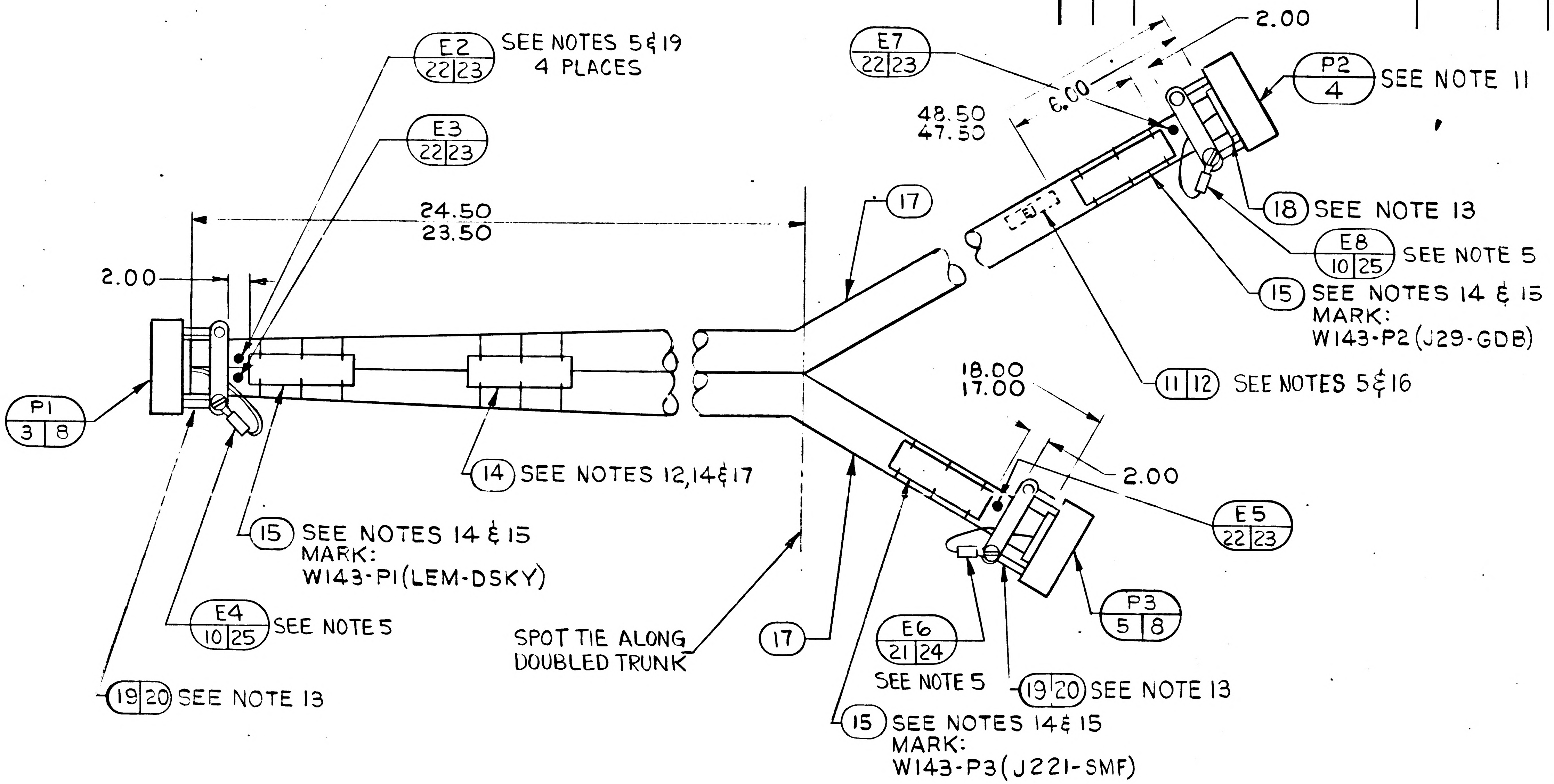
SIZE	CODE IDENT NO.	
A	99974	6900025
SCALE-NONE	REV LTR E	SHEET 14 OF 16

CABLE ASSEMBLY W143 6900025 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 81	26		E5-BB					.38	NO			
			E6					.16	NO			

SIZE	CODE IDENT NO.	
A	99974	6900025
SCALE-NONE	REV LTR E	SHEET 15 OF 16

REVISIONS TDRR 23807					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPR
		SEE SHEET 1 FOR REVISION RECORD			


E2 22\|23 SEE NOTES 5 & 19 4 PLACES
E3 22\|23
24.50 23.50
2.00
P1 3\|8
14 SEE NOTES 12,14 & 17
15 SEE NOTES 14 & 15 MARK: W143-P1(LEM-DSKY)
E4 10\|25 SEE NOTE 5
19\|20 SEE NOTE 13
SPOT TIE ALONG DOUBLED TRUNK
17
17
E7 22\|23
48.50 47.50
6.00
2.00
P2 4 SEE NOTE 11
18 SEE NOTE 13
E8 10\|25 SEE NOTE 5
15 SEE NOTES 14 & 15 MARK: W143-P2(J29-GDB)
11\|12 SEE NOTES 5 & 16
18.00 17.00
2.00
E5 22\|23
P3 5\|8
E6 21\|24 SEE NOTE 5
19\|20 SEE NOTE 13
15 SEE NOTES 14 & 15 MARK: W143-P3(J221-SMF)

6900043-011 NEXT ASSY	1900030 USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± .50 ANGLES ± — DO NOT SCALE THIS DRAWING	AC ELECTRONICS DIVISION GENERAL MOTORS CORPORATION DRAWN Janowiak DATE 4 AUG 65 CHECKED Niolye 11 AUG 65 APPROVAL E Swanson 11 Aug '65 APPROVAL O Goldman 10/26/65	MANNED SPACECRAFT CENTER HOUSTON, TEXAS CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W143
APPLICATION		MATERIAL CONTRACT NAS 9-497	NASA APPROVAL MIT APPROVAL	CODE IDENT NO. 99974 SIZE C 6900025 SCALE NONE SHEET 16 OF 16

MIL 1077C—P

B 6900029

REVISIONS 23388					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER MXC 205282		23 SEP 65	RP
B		INITIAL RELEASE CLASS A PER TDRR 23388		18 OCT 65	JR

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. MATERIAL:
   A. QQ-A-250/8 TEMPER H32 (ES2105 AL ALY 5052).
   B. 1010897-002 CELLULAR SILICONE SHEET.

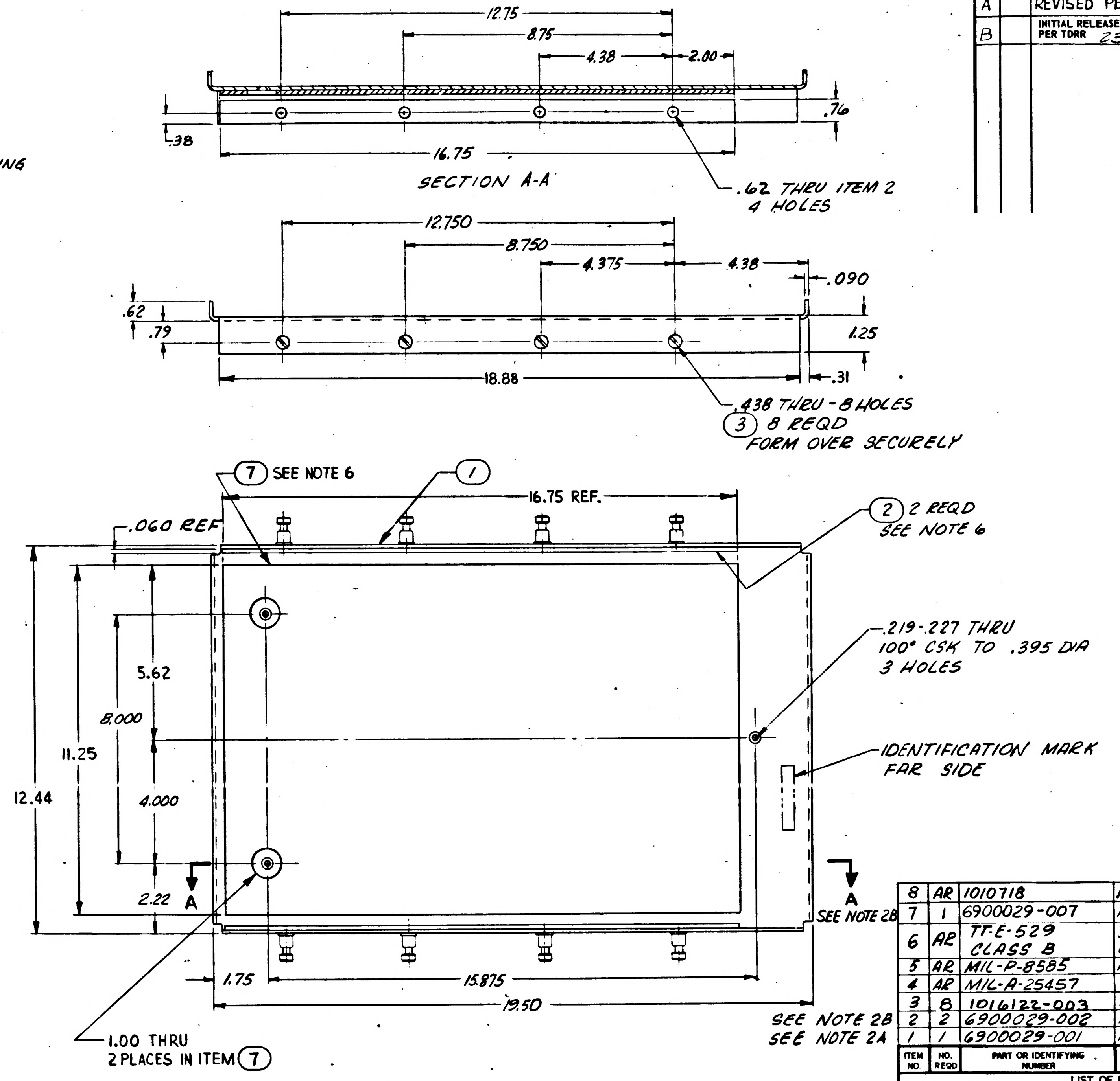
3. FINISH ITEM ① APPLY P513 OF MIL-F-14072. PRIME USING ITEM ⑤ AND APPLY 2 COATS OF ITEM ⑥

4. UNLESS OTHERWISE SPECIFIED:
   A. ALL INSIDE BEND RADII TO BE .092.
   B. MINIMUM BEND RELIEFS PERMISSIBLE.

5. MUST BE FREE FROM BURRS AND SHARP EDGES.

6. BOND ITEM ② AND ITEM ⑦ TO ITEM ① USING ITEMS ④ AND ⑧ PER ND 1002151.

7. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES 267).


12.75
8.75
4.38
2.80
.76
.38
16.75
SECTION A-A
.62 THRU ITEM 2
4 HOLES
12.750
8.750
4.375
4.38
.090
.62
.79
1.25
18.88
.31
.438 THRU - 8 HOLES
③ 8 REQD
FORM OVER SECURELY
⑦ SEE NOTE 6
①
16.75 REF.
.060 REF
② 2 REQD
SEE NOTE 6
.219-.227 THRU
100° CSK TO .395 DIA
3 HOLES
5.62
8.000
11.25
12.44
4.000
IDENTIFICATION MARK
FAR SIDE
2.22
A
A
SEE NOTE 2B
1.75
15.875
19.50
1.00 THRU
2 PLACES IN ITEM ⑦
SEE NOTE 2B
SEE NOTE 2A

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
8	AR	1010718	PRIMER, ADHESIVE
7	1	6900029-007	PAD
6	AR	TT-E-529 CLASS B	SEMI-GLOSS ENAMEL DARK GRAY, COLOR 26251 OF FED-STD-595
5	AR	MIL-P-8585	PRIMER, ZINC CHROMATE (ES2589
4	AR	MIL-A-25457	ADHESIVE, SILICONE RUBBER (AIR DRYING)
3	8	1016122-003	FASTENER
2	2	6900029-002	PAD
1	1	6900029-001	PLATE

LIST OF PARTS AND MATERIALS

6900007-011	6900007-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	±.005	±1°
−	±.02	

DO NOT SCALE THIS DRAWING

MATERIAL ———

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Lo… 7 Aug 65
CHECKED J. Stel… 26 AUG 65
APPROVAL R.C. … 26 Aug 65
APPROVAL … 10-1-65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PLATE, MOUNTING
BUFFER
(INSEPARABLE ASSEMBLY)

CODE IDENT NO. 99974 | SIZE D | 6900029

SCALE 1/2 | SHEET 1 OF 1

26 AUG 65

D.O.
60874

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	INITIAL RELEASE CLASS A PER TDRR 23807		KES

Charleston
17 AUG 65
AC ONLY

REV STATUS OF SHEETS	REV	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN R. J. Begley DATE 16 AUG 65
CHECKED 17 AUG 65
APPROVAL E Swanson 17 Aug 65
APPROVAL 11/26/65

CABLE ASSEMBLY, SPECIAL
PURPOSE, ELECTRICAL-W138

NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

CODE IDENT NO. 99974
SIZE A
6900040
REV A

CONTRACT NAS9-497
SCALE NONE
SHEET 1 OF 15

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
7	SERIALIZE PER ND1002023
8	MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE
9	SECURE TO CABLE USING ITEM 20, MARKING TO READ AWAY FROM CONNECTOR
10	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 17 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP
11	GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING ~~(FURNISHED PLUGS)~~ (ITEM 9).
12	LOCATE LEAD IDENTIFICATION SLEEVING ADJ. TO SOLDER SLEEVES
13	~~SEAL ZIPPER TUBING USING ND 1002155.~~

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 2 OF 15

NOTE NUMBER	GENERAL NOTES DESCRIPTION
14	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD B - TO END SHIELD L WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER. W - WHITE Y - WHITE WITH YELLOW TRACER.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 3 OF 15

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900040-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 230 FT TOT LG.
	2	1	6900040-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT., 80 FT TOT LG
	4	1	6900040-003	WIRE, ND1002181, TYPE 3, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, WHT/YEL, 10 FT. TOT LG.
	3	1	6900040-004	WIRE, ND1002181, TYPE 1, CLASS 4, WHT. JKT., 22AWG, WHT., 40 FT TOT LG.
5	5	1	1897250-001	CONNECTOR PLUG
5	6	1	1897249-004	CONNECTOR PLUG
5	7		1897190- 1	CONTACT PIN (FURNISHED WITH ITEM 5)
5	8		1897190- 2	CONTACT SOCKET (FURNISHED WITH ITEM 6)
5	9	23	1010958	SEALING PLUG
5	10	2	1010763- 1	SOLDER SLEEVE
5	11	5	1010763- 2	SOLDER SLEEVE
5	12	13	1010763- 3	SOLDER SLEEVE
5	13	34	1010490-222	INSULATION SLEEVING, ELECT.
5	14	17	1010490-228	INSULATION SLEEVING
5	15	4	1010490-232	INSULATION SLEEVING
	16	1	6900040-005	ZIPPER TUBING PER ND1002155, TYPE I, GRAY, 1.00 DIA., 10 FT. TOTAL LENGTH

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 4 OF 15

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	AR	1901390	FILLER TAPE
5	18	1	1016128-011	BAND, IDENTIFICATION
5	19	2	1016128-041	BAND, IDENTIFICATION
	20	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES2732 NO. 18)
5	21	2	1010933-105	CLAMP, CABLE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 5 OF 15

CABLE ASSEMBLY W138 6900040 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG.	ACCESSORY ITEMS	REMARKS
A	1	1				2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A	1A	2		SHLD A1 E1					.25 .25	NO			
A	1L			P1-38 P2-38					.15 .15	NO NO		7 8	
A	1R			P1-37 P2-37					.15 .15	NO NO		7 8	
A	2	1				2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A	2A	2		SHLD E1					.25 .25	NO NO			
A	2L			P1-40 P2-40					.15 .15	NO NO		7 8	
A	2R			P1-39 P2-39					.15 .15	NO NO		7 8	
A	3	1				2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A	3A	2		SHLD A3 E1					.25 .25	NO NO			
A	3L			P1-42 P2-42					.15 .15	NO NO		7 8	
A	3R			P1-41 P2-41					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 6 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	4	3				2.30 2.30	2.00 2.00				A,6A B,7	11, 15 14	
A	4A	2		SHLD A4 E2					.25 .25	NO NO			
A	4W			P1-46 P2-46					.15 .15	NO NO		7 8	
A	5	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A	5A	2		SHLD A5 E2					.25 .25	NO NO			
A	5W			P1-47 P2-47					.15 .15	NO NO		7 8	
A	6	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A	6A	2		SHLD A6 E2					.25 .25	NO NO			
A	6W			P1-48 P2-48					.15 .15	NO NO		7 8	
A	7	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A	7A	2		SHLD A7 E3					.25 .25	NO NO			
A	7W			P1-49 P2-49					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 7 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	8	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	8L			P1-2 P2-2					.15 .15	NO NO		7 8	
A	8R			P1-1 P2-1					.15 .15	NO NO		7 8	
A	9	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	9L			P1-4 P2-4					.15 .15	NO NO		7 8	
A	9R			P1-3 P2-3					.15 .15	NO NO		7 8	
A	10	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	10L			P1-6 P2-6					.15 .15	NO NO		7 8	
A	10R			P1-5 P2-5					.15 .15	NO NO		7	
A	11	4				2.80 2.50	2.50 2.00				B,7 B,7	3 13	
A	11L			P1-8 P2-8					.15 .15	NO NO		7 8	
A	11R			P1-7 P2-7					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 8 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	11Y			P1-9 P2-9					.15 .15	NO NO		7 8	
A	12	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	12L			P1-12 P2-12					.15 .15	NO NO		7 8	
A	12R			P1-11 P2-11					.15 .15	NO NO		7 8	
A	13	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	13L			P1-14 P2-14					.15 .15	NO NO		7 8	
A	13R			P1-13 P2-13					.15 .15	NO NO		7 8	
A	14	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	14L			P1-30 P2-30					.15 .15	NO NO		7 8	
A	14R			P1-29 P2-29					.15 .15	NO NO		7 8	
A	15	1				3.30 2.80	3.00 2.50				A,6A B,7	12, 14 13	
A	15A	2		SHLD A15 E3					.25 .25	NO NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 9 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 /A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15L			P1-32					.15	NO		7	
			P2-32					.15	NO		8	
A 15R			P1-31					.15	NO		7	
			P2-31					.15	NO		8	
A 16	2		E1					.25	NO			
			E2					.25	NO			
A 17	2		E2					.15	NO			
			E3					.25	NO			
A 18	1				3.30	3.00				A,6B	12, 14	
					2.80	2.50				B,7	13	
A 18A	2		SHLD A18					.25	NO			
			P1-63					.15	NO		7	
A 18L			P1-35					.15	NO		7	
			P2-35					.15	NO		8	
A 18R			P1-34					.15	NO		7	
			P2-34					.15	NO		8	
A 19	1				3.30	3.00				A,6B	12, 14	
					2.80	2.50				A,6B	12, 14	
A 19A	2		SHLD A19					.25	NO			
			P1-53					.15	NO		7	
A 19B	2		P2-53					.15	NO		8	
			SHLD A19					.25	NO			
A 19L			P1-52					.15	NO		7	
			P2-52					.15	NO		8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040

SCALE - NONE | REV LTR /A | SHEET 10 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 /A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19R			P1-51					.15	NO		7	
			P2-51					.18	NO		8	
A 20	1				3.30	3.00				A,6B	12, 14	
					2.80	2.50				A,6B	12, 14	
A 20A	2		SHLD A20					.25	NO			
			P1-56					.15	NO		7	
A 20B	2		P2-56					.15	NO		8	
			SHLD A20					.25	NO			
A 20L			P1-55					.15	NO		7	
			P2-55					.15	NO		8	
A 20R			P1-54					.15	NO		7	
			P2-54					.15	NO		8	
A 21	1				3.80	3.50				A,6B	12, 14	
					3.30	3.00				A,6B	12, 14	
A 21A	2		SHLD A21					.25	NO			
			P1-59					.15	NO		7	
A 21B	2		P2-59					.15	NO		8	
			SHLD A21					.25	NO			
A 21L			P1-58					.15	NO		7	
			P2-58					.15	NO		8	
A 21R			P1-57					.15	NO		7	
			P2-57					.15	NO		8	
A 22	1				3.80	3.50				A,6B	12, 14	
					3.30	3.00				A,6B	12, 14	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040

SCALE - NONE | REV LTR /A | SHEET 11 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 /A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 22A	2		SHLD A22					.25	NO			
			P1-62					.15	NO		7	
A 22B	2		P2-62					.15	NO		8	
			SHLD A22					.25	NO			
A 22L			P1-61					.15	NO		7	
			P2-61					.15	NO		8	
A 22R			P1-60					.15	NO		7	
			P2-60					.15	NO		8	
A 23	1				3.80	3.50				B,7	13	
					3.30	3.00				B,7	13	
A 23L			P1-66					.15	NO		7	
			P2-66					.15	NO		8	
A 23R			P1-65					.15	NO		7	
			P2-65					.15	NO		8	
A 24	1				3.80	3.50				B,7	13	
					3.30	3.00				B,7	13	
A 24L			P1-68					.15	NO		7	
			P2-68					.15	NO		8	
A 24R			P1-67					.15	NO		7	
			P2-67					.15	NO		8	
A 25	1				3.80	3.50				B,7	13	
					3.30	3.00				B,7	13	
A 25L			P1-70					.15	NO		7	
			P2-70					.15	NO		8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040

SCALE - NONE | REV LTR /A | SHEET 12 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 /A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P1-69					.15	NO		7	
			P2-69					.15	NO		8	
A 26	1				3.80	3.50				B,7	13	
					3.30	3.00				B,7	13	
A 26L			P1-22					.15	NO		7	
			P2-22					.15	NO		8	
A 26R			P1-21					.15	NO		7	
			P2-21					.15	NO		8	
A 27	2		P1-85					.15	NO		7	
			P2-85					.15	NO		8	
A 28	1				3.80	3.50				B,7	13	
					3.30	3.00				B,7	13	
A 28L			P1-24					.15	NO		7	
			P2-24					.15	NO		8	
A 28R			P1-23					.15	NO		7	
			P2-23					.15	NO		8	
A 29	1				3.80	3.50				B,7	13	
					3.30	3.00				B,7	13	
A 29L			P1-26					.15	NO		7	
			P2-26					.15	NO		8	
A 29R			P1-25					.15	NO		7	
			P2-25					.15	NO		8	
A 30	2		P1-27					.15	NO		7	
			P2-27					.15	NO		8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040

SCALE - NONE | REV LTR /A | SHEET 13 OF 15

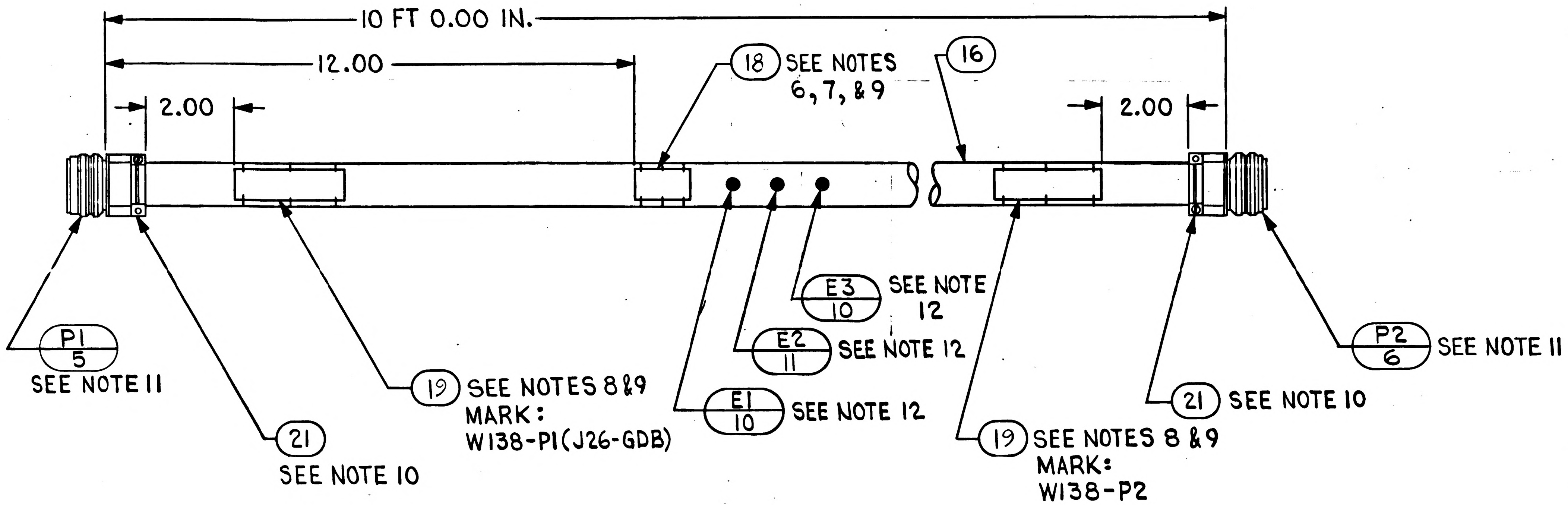
MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE CNE, FIG	ACCESSORY ITEMS	REMARKS
A 31	2		E3					.25	NO			
			P1-33					.15	NO		7	
A 32	1				4.30	4.00				B,7	13	
					3.80	3.50				E,7	13	
A 32L			P1-81					.15	NO		7	
			P2-81					.15	NO		8	
A 32R			P1-80					.15	NO		7	
			P2-80					.15	NO		8	
A 33	1				4.30	4.00				B,7	13	
					3.80	3.50			NO	E,7	13	
A 33L			P1-83					.15	NO		7	
			P2-83					.15	NO		8	
A 33R			P1-82					.15	NO		7	
			P2-82					.15	NO		8	
A 34	2		P1-84					.15	NO		7	
			P2-84					.15	NO		8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR A	SHEET 14 OF 15

SYM	ZONE	REVISIONS TDRR 23507 DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD			


10 FT 0.00 IN.
12.00
2.00
2.00
18 SEE NOTES 6, 7, & 9
16
P1 / 5 SEE NOTE 11
21 SEE NOTE 10
19 SEE NOTES 8 & 9 MARK: W138-P1(J26-GDB)
E1 / 10 SEE NOTE 12
E2 / 11 SEE NOTE 12
E3 / 10 SEE NOTE 12
19 SEE NOTES 8 & 9 MARK: W138-P2
21 SEE NOTE 10
P2 / 6 SEE NOTE 11

2900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.05 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.G. Brekke DATE 16AUG65
CHECKED Mocys 17AUG65
APPROVAL E. Swanson 17Aug65
APPROVAL C. Gilman 1/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL W Kupfer 4Nov65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL-W138

CODE IDENT NO. 99974 SIZE C 6900040
SCALE 1:2 SHEET 15 OF 15

MIL 1077C—P

D.O.
60874

APPLICATION	
NEXT ASSY	USED ON
6900043-011	1900030 (M)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	INITIAL RELEASE CLASS A PER TDRR 23807		KES
B	REVISED PER TDRR 23714	10 NOV 65	JHP EF

Charleston
17 AUG 65
AC ONLY

REV STATUS OF SHEETS	REV	B	A	A	B	A	A	A	A	A	A	A	A	A	A	A
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN R. G. Beyler DATE 16 AUG 65
CHECKED Y. Molye 17 AUG 65
APPROVAL E. Swanson 17 Aug 65
APPROVAL L. Goldman 11/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Gugle 4 Nov 65

CABLE ASSEMBLY, SPECIAL
PURPOSE, ELECTRICAL-W138

CODE IDENT NO.	SIZE		REV
99974	A	6900040	B

CONTRACT NAS9-497

SCALE NONE

SHEET 1 OF 15

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
7	SERIALIZE PER ND1002023
8	MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE
9	SECURE TO CABLE USING ITEM 20, MARKING TO READ AWAY FROM CONNECTOR
10	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 17 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP
11	GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING ~~(FURNISHED PLUGS)~~ (ITEM 9).
12	LOCATE LEAD IDENTIFICATION SLEEVING ADJ. TO SOLDER SLEEVES
13	~~SEAL ZIPPER TUBING USING ND 1002155.~~

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR A
SHEET 2 OF 15

NOTE NUMBER	GENERAL NOTES DESCRIPTION
14	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD B - TO END SHIELD L WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER. W - WHITE Y - WHITE WITH YELLOW TRACER.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR A
SHEET 3 OF 15

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900040-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 230 FT TOT LG.
	2	1	6900040-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT., 80 FT TOT LG
	4	1	6900040-003	WIRE, ND1002181, TYPE 3, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, WHT/YEL, 10 FT TOT LG.
	3	1	6900040-004	WIRE, ND1002181, TYPE 1, CLASS 4, WHT. JKT., 22AWG, WHT., 40 FT TOT LG.
5	5	1	1897250-001	CONNECTOR PLUG
5	6	1	1897249-004	CONNECTOR PLUG
5	7		1897190- 1	CONTACT PIN (FURNISHED WITH ITEM 5)
5	8		1897190- 2	CONTACT SOCKET (FURNISHED WITH ITEM 6)
5	9	23	1010958	SEALING PLUG
5	10	2	1010763- 1	SOLDER SLEEVE
5	11	5	1010763- 2	SOLDER SLEEVE
5	12	13	1010763- 3	SOLDER SLEEVE
5	13	34	1010490-222	INSULATION SLEEVING, ELECT.
5	14	17	1010490-228	INSULATION SLEEVING
5	15	4	1010490-232	INSULATION SLEEVING
	16	1	6900040-005	ZIPPER TUBING PER ND1002155, TYPE III, ZTZ-SHN-3-CL, 1.00 DIA., 11 FT. TOTAL LENGTH

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR ~~A~~ B
SHEET 4 OF 15

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	AR	1901390	FILLER TAPE
5	18	1	1016128-011	BAND, IDENTIFICATION
5	19	2	1016128-041	BAND, IDENTIFICATION
	20	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES2732 NO. 18)
5	21	2	1010933-105	CLAMP, CABLE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR A
SHEET 5 OF 15

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1			2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A	1A	2	SHLD A1 E1					.25 .25	NO			
A	1L		P1-38 P2-38					.15 .15	NO NO		7 8	
A	1R		P1-37 P2-37					.15 .15	NO NO		7 8	
A	2	1			2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A	2A	2	SHLD E1					.25 .25	NO NO			
A	2L		P1-40 P2-40					.15 .15	NO NO		7 8	
A	2R		P1-39 P2-39					.15 .15	NO NO		7 8	
A	3	1			2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A	3A	2	SHLD A3 E1					.25 .25	NO NO			
A	3L		P1-42 P2-42					.15 .15	NO NO		7 8	
A	3R		P1-41 P2-41					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040	
SCALE - NONE	REV LTR A	SHEET 6 OF 15	

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	4	3			2.30 2.30	2.00 2.00				A,6A B,7	11, 15 14	
A	4A	2	SHLD A4 E2					.25 .25	NO NO			
A	4W		P1-46 P2-46					.15 .15	NO NO		7 8	
A	5	3			2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A	5A	2	SHLD A5 E2					.25 .25	NO NO			
A	5W		P1-47 P2-47					.15 .15	NO NO		7 8	
A	6	3			2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A	6A	2	SHLD A6 E2					.25 .25	NO NO			
A	6W		P1-48 P2-48					.15 .15	NO NO		7 8	
A	7	3			2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A	7A	2	SHLD A7 E3					.25 .25	NO NO			
A	7W		P1-49 P2-49					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040	
SCALE - NONE	REV LTR A	SHEET 7 OF 15	

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	8	1			2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	8L		P1-2 P2-2					.15 .15	NO NO		7 8	
A	8R		P1-1 P2-1					.15 .15	NO NO		7 8	
A	9	1			2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	9L		P1-4 P2-4					.15 .15	NO NO		7 8	
A	9R		P1-3 P2-3					.15 .15	NO NO		7 8	
A	10	1			2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	10L		P1-6 P2-6					.15 .15	NO NO		7 8	
A	10R		P1-5 P2-5					.15 .15	NO NO		7 8	
A	11	4			2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	11L		P1-8 P2-8					.15 .15	NO NO		7 8	
A	11R		P1-7 P2-7					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040	
SCALE - NONE	REV LTR A	SHEET 8 OF 15	

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	11Y		P1-9 P2-9					.15 .15	NO NO		7 8	
A	12	1			2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	12L		P1-12 P2-12					.15 .15	NO NO		7 8	
A	12R		P1-11 P2-11					.15 .15	NO NO		7 8	
A	13	1			2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	13L		P1-14 P2-14					.15 .15	NO NO		7 8	
A	13R		P1-13 P2-13					.15 .15	NO NO		7 8	
A	14	1			2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A	14L		P1-30 P2-30					.15 .15	NO NO		7 8	
A	14R		P1-29 P2-29					.15 .15	NO NO		7 8	
A	15	1			3.30 2.80	3.00 2.50				A,6A B,7	12, 14 13	
A	15A	2	SHLD A15 E3					.25 .25	NO NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040	
SCALE - NONE	REV LTR A	SHEET 9 OF 15	

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15L			P1-32 P2-32					.15 .15	NO NO		7 8	
A 15R			P1-31 P2-31					.15 .15	NO NO		7 8	
A 16	2		E1 E2					.25 .25	NO NO			
A 17	2		E2 E3					.15 .25	NO NO			
A 18	1				3.30 2.80	3.00 2.50				A,6B B,7	12, 14 13	
A 18A	2		SHLD A18 P1-63					.25 .15	NO NO		 7	
A 18L			P1-35 P2-35					.15 .15	NO NO		7 8	
A 18R			P1-34 P2-34					.15 .15	NO NO		7 8	
A 19	1				3.30 2.80	3.00 2.50				A,6B A,6B	12, 14 12, 14	
A 19A	2		SHLD A19 P1-53					.25 .15	NO NO		 7	
A 19B	2		P2-53 SHLD A19					.15 .25	NO NO		8	
A 19L			P1-52 P2-52					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040
SCALE-NONE | REV LTR A | SHEET 10 OF 15

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19R			P1-51 P2-51					.15 .18	NO NO		7 8	
A 20	1				3.30 2.80	3.00 2.50				A,6B A,6B	12, 14 12, 14	
A 20A	2		SHLD A20 P1-56					.25 .15	NO NO		 7	
A 20B	2		P2-56 SHLD A20					.15 .25	NO NO		8	
A 20L			P1-55 P2-55					.15 .15	NO NO		7 8	
A 20R			P1-54 P2-54					.15 .15	NO NO		7 8	
A 21	1				3.80 3.30	3.50 3.00				A,6B A,6B	12, 14 12, 14	
A 21A	2		SHLD A21 P1-59					.25 .15	NO NO		 7	
A 21B	2		P2-59 SHLD A21					.15 .25	NO NO		8	
A 21L			P1-58 P2-58					.15 .15	NO NO		7 8	
A 21R			P1-57 P2-57					.15 .15	NO NO		7 8	
A 22	1				3.80 3.30	3.50 3.00				A,6B A,6B	12, 14 12, 14	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040
SCALE-NONE | REV LTR A | SHEET 11 OF 15

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 22A	2		SHLD A22 P1-62					.25 .15	NO NO		 7	
A 22B	2		P2-62 SHLD A22					.15 .25	NO NO		8	
A 22L			P1-61 P2-61					.15 .15	NO NO		7 8	
A 22R			P1-60 P2-60					.15 .15	NO NO		7 8	
A 23	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 23L			P1-66 P2-66					.15 .15	NO NO		7 8	
A 23R			P1-65 P2-65					.15 .15	NO NO		7 8	
A 24	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 24L			P1-68 P2-68					.15 .15	NO NO		7 8	
A 24R			P1-67 P2-67					.15 .15	NO NO		7 8	
A 25	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 25L			P1-70 P2-70					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040
SCALE-NONE | REV LTR A | SHEET 12 OF 15

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P1-69 P2-69					.15 .15	NO NO		7 8	
A 26	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 26L			P1-22 P2-22					.15 .15	NO NO		7 8	
A 26R			P1-21 P2-21					.15 .15	NO NO		7 8	
A 27	2		P1-85 P2-85					.15 .15	NO NO		7 8	
A 28	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 28L			P1-24 P2-24					.15 .15	NO NO		7 8	
A 28R			P1-23 P2-23					.15 .15	NO NO		7 8	
A 29	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 29L			P1-26 P2-26					.15 .15	NO NO		7 8	
A 29R			P1-25 P2-25					.15 .15	NO NO		7 8	
A 30	2		P1-27 P2-27					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040
SCALE-NONE | REV LTR A | SHEET 13 OF 15

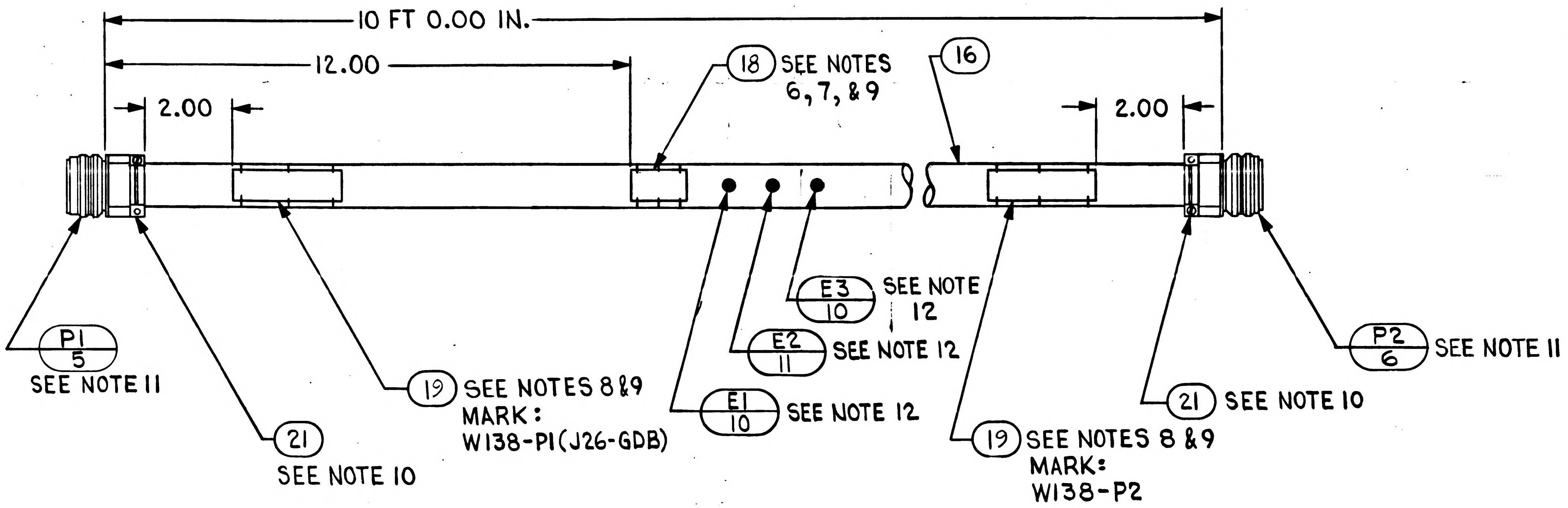
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE CNE, FIG	ACCESSORY ITEMS	REMARKS
A 31	2		E3					.25	NO			
			P1-33					.15	NO		7	
A 32	1				4.30	4.00				B,7	13	
					3.80	3.50				E,7	13	
A 32L			P1-81					.15	NO		7	
			P2-81					.15	NO		8	
A 32R			P1-80					.15	NO		7	
			P2-80					.15	NO		8	
A 33	1				4.30	4.00				8,7	13	
					3.80	3.50			NO	6,7	13	
A 33L			P1-83					.15	NO		7	
			P2-83					.15	NO		8	
A 33R			P1-82					.15	NO		7	
			P2-82					.15	NO		8	
A 34	2		P1-84					.15	NO		7	
			P2-84					.15	NO		8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040
SCALE-NONE	REV LTR ≠A	SHEET 14 OF 15

6900040

REVISIONS TDRR 23507

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓝ		SEE SHEET 1 FOR REVISION RECORD			



10 FT 0.00 IN.
12.00
2.00
2.00
18 SEE NOTES 6, 7, & 9
16
P1 / 5 SEE NOTE 11
21 SEE NOTE 10
19 SEE NOTES 8 & 9 MARK: W138-P1(J26-GDB)
E1 / 10 SEE NOTE 12
E2 / 11 SEE NOTE 12
E3 / 10 SEE NOTE 12
19 SEE NOTES 8 & 9 MARK: W138-P2
21 SEE NOTE 10
P2 / 6 SEE NOTE 11

2900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
± —	± .05	± —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R.G. Becker DATE 16AUG65
CHECKED Moege 17AUG65
APPROVAL E. Swanson 17Aug65
APPROVAL [illegible] 10/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Kupfer 4Nov65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL
PURPOSE, ELECTRICAL-W138

CODE IDENT NO. 99974
SIZE C
6900040
SCALE 1:2
SHEET 15 OF 15

MIL 1077C—P

6900040 A

D.O.
60874

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030 Ⓜ	A	INITIAL RELEASE CLASS A PER TDRR 23807		KES
	⑪	B	REVISED PER TDRR 23714	10 NOV 65	J.H.P. EF
		C	REVISED PER TDRR 25408	28 JAN 66	KP MEM

Charleston
17 AUG 65
AC ONLY

REV STATUS OF SHEETS	REV	C	A	C	C	C	A	A	A	C	A	A	A	A	C	C
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN R. G. Beeler DATE 16 AUG 65
CHECKED 17 AUG 65
APPROVAL E Swanson 17 Aug 65
APPROVAL 11/26/65

CABLE ASSEMBLY, SPECIAL
PURPOSE, ELECTRICAL-W138

NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

CODE IDENT NO.	SIZE		REV
99974	A	6900040	C

CONTRACT NAS9-497
SCALE NONE
SHEET 1 OF 15

CABLE ASSEMBLY W138 6900040 A

NOTE NUMBER | GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.

5 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

7 SERIALIZE PER ND1002023

8 MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

9 SECURE TO CABLE USING ITEM 20, MARKING TO READ AWAY FROM CONNECTOR

10 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 17 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP

11 GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING ~~(FURNISHED PLUGS)~~ (ITEM 9).

12 LOCATE LEAD IDENTIFICATION SLEEVING ADJ. TO SOLDER SLEEVES

13 ~~SEAL ZIPPER TUBING USING ND 1002155.~~

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900040	
SCALE-NONE	REV LTR A	SHEET	2 OF 15

MIL 2084 4-61

CABLE ASSEMBLY W138 6900040 C

NOTE NUMBER | GENERAL NOTES DESCRIPTION

14 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
A - FROM END SHIELD
B - TO END SHIELD
L WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER.
W - WHITE
Y - WHITE WITH YELLOW TRACER.

15 ZIPPER TUBING SHALL HAVE -Z- TYPE TRACK, WITH .003 + OR - .001 THICK ALUMINUM FOIL.

16 SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE IN E4-B AND E5-B RESPECTIVELY.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE A	CODE IDENT NO. 99974	6900040	
SCALE-NONE	REV LTR C	SHEET	3 OF 15

MIL 2084 9-65

CABLE ASSEMBLY W138 6900040 C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900040-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 210 FT TOT LG.
	2	1	6900040-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT., 80 FT TOTAL LENGTH
	3	1	6900040-004	WIRE, ND 1002181, TYPE 1, CLASS 4, WHT. JKT., 22AWG, WHT., 40 FT TOTAL LENGTH
	4	1	6900040-003	WIRE, ND 1002181, TYPE 3, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, WHT/YEL, 10 FT TOTAL LENGTH
5	5	1	1897250-001	CONNECTOR PLUG
5	6	1	1897249-004	CONNECTOR PLUG
5	7		1897190- 1	CONTACT PIN
5	8		1897190- 2	CONTACT SOCKET
5	9	23	1010958	SEALING PLUG
5	10	2	1010763- 1	SOLDER SLEEVE
5	11	5	1010763- 2	SOLDER SLEEVE
5	12	13	1010763- 3	SOLDER SLEEVE
5	13	30	1010490-222	INSULATION SLEEVING, ELECT.
5	14	17	1010490-228	INSULATION SLEEVING
5	15	4	1010490-232	INSULATION SLEEVING

SIZE A	CODE IDENT NO. 99974	6900040	
SCALE-NONE	REV LTR C	SHEET	4 OF 15

MIL 2084 9-65

CABLE ASSEMBLY W138 6900040 C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
15	16	1	6900040-005	ZIPPER TUBING PER ND1002155, TYPE III, 1.00 DIA., 11 FT. TOTAL LENGTH
	17	AR	1901390	FILLER TAPE
5	18	1	1016128-011	BAND, IDENTIFICATION
5	19	2	1016128-041	BAND, IDENTIFICATION
	20	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES2732 NO. 18)
5	21	2	1010933-105	CLAMP, CABLE
5	22	2	1015902- 45	TERMINAL LUG
5	23	2	1016006-002	SPLICE REDUCER
5	24	2	1010490-258	INSULATION, SLEEVING, ELECT.
	25	1	6900040-006	WIRE, ND1002181, TYPE 1, CLASS 1, 20AWG WHT, 16 INCHES TOTAL LENGTH

SIZE A	CODE IDENT NO. 99974	6900040	
SCALE-NONE	REV LTR C	SHEET	5 OF 15

MIL 2084 9-65

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1				2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A 1A	2		SHLD A1 E1					.25 .25	NO			
A 1L			P1-38 P2-38					.15 .15	NO NO		7 8	
A 1R			P1-37 P2-37					.15 .15	NO NO		7 8	
A 2	1				2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A 2A	2		SHLD E1					.25 .25	NO NO			
A 2L			P1-40 P2-40					.15 .15	NO NO		7 8	
A 2R			P1-39 P2-39					.15 .15	NO NO		7 8	
A 3	1				2.30 2.30	2.00 2.00				A,6A B,7	12, 14 13	
A 3A	2		SHLD A3 E1					.25 .25	NO NO			
A 3L			P1-42 P2-42					.15 .15	NO NO		7 8	
A 3R			P1-41 P2-41					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040

SCALE-NONE | REV LTR A | SHEET 6 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 4	3				2.30 2.30	2.00 2.00				A,6A B,7	11, 15 14	
A 4A	2		SHLD A4 E2					.25 .25	NO NO			
A 4W			P1-46 P2-46					.15 .15	NO NO		7 8	
A 5	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A 5A	2		SHLD A5 E2					.25 .25	NO NO			
A 5W			P1-47 P2-47					.15 .15	NO NO		7 8	
A 6	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A 6A	2		SHLD A6 E2					.25 .25	NO NO			
A 6W			P1-48 P2-48					.15 .15	NO NO		7 8	
A 7	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 14	
A 7A	2		SHLD A7 E3					.25 .25	NO NO			
A 7W			P1-49 P2-49					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040

SCALE-NONE | REV LTR A | SHEET 7 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 8	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A 8L			P1-2 P2-2					.15 .15	NO NO		7 8	
A 8R			P1-1 P2-1					.15 .15	NO NO		7 8	
A 9	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A 9L			P1-4 P2-4					.15 .15	NO NO		7 8	
A 9R			P1-3 P2-3					.15 .15	NO NO		7 8	
A 10	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A 10L			P1-6 P2-6					.15 .15	NO NO		7 8	
A 10R			P1-5 P2-5					.15 .15	NO NO		7 8	
A 11	4				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A 11L			P1-8 P2-8					.15 .15	NO NO		7 8	
A 11R			P1-7 P2-7					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900040

SCALE-NONE | REV LTR A | SHEET 8 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 11Y			P1-9 P2-9					.15 .15	NO NO		7 8	
A 12			DELETED									
A 12L			DELETED									
A 12R			DELETED									
A 13			DELETED									
A 13L			DELETED									
A 13R			DELETED									
A 14	1				2.80 2.50	2.50 2.00				B,7 B,7	13 13	
A 14L			P1-30 P2-30					.15 .15	NO NO		7 8	
A 14R			P1-29 P2-29					.15 .15	NO NO		7 8	
A 15	1				3.30 2.80	3.00 2.50				A,6A B,7	12, 14 13	
A 15A	2		SHLD A15 E3					.25 .25	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900040

SCALE-NONE | REV LTR C | SHEET 9 OF 15

MIL 2084 9-65

CABLE ASSEMBLY W138 6900040 ≠A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15L			P1-32 P2-32					.15 .15	NO NO		7 8	
A 15R			P1-31 P2-31					.15 .15	NO NO		7 8	
A 16	2		E1 E2					.25 .25	NO NO			
A 17	2		E2 E3					.15 .25	NO NO			
A 18	1				3.30 2.80	3.00 2.50				A,6B B,7	12, 14 13	
A 18A	2		SHLD A18 P1-63					.25 .15	NO NO		7	
A 18L			P1-35 P2-35					.15 .15	NO NO		7 8	
A 18R			P1-34 P2-34					.15 .15	NO NO		7 8	
A 19	1				3.30 2.80	3.00 2.50				A,6B A,6B	12, 14 12, 14	
A 19A	2		SHLD A19 P1-53					.25 .15	NO NO		7	
A 19B	2		P2-53 SHLD A19					.15 .25	NO NO		8	
A 19L			P1-52 P2-52					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR ≠A
SHEET 10 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 ≠A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19R			P1-51 P2-51					.15 .18	NO NO		7 8	
A 20	1				3.30 2.80	3.00 2.50				A,6B A,6B	12, 14 12, 14	
A 20A	2		SHLD A20 P1-56					.25 .15	NO NO		7	
A 20B	2		P2-56 SHLD A20					.15 .25	NO NO		8	
A 20L			P1-55 P2-55					.15 .15	NO NO		7 8	
A 20R			P1-54 P2-54					.15 .15	NO NO		7 8	
A 21	1				3.80 3.30	3.50 3.00				A,6B A,6B	12, 14 12, 14	
A 21A	2		SHLD A21 P1-59					.25 .15	NO NO		7	
A 21B	2		P2-59 SHLD A21					.15 .25	NO NO		8	
A 21L			P1-58 P2-58					.15 .15	NO NO		7 8	
A 21R			P1-57 P2-57					.15 .15	NO NO		7 8	
A 22	1				3.80 3.30	3.50 3.00				A,6B A,6B	12, 14 12, 14	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR ≠A
SHEET 11 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 ≠A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 22A	2		SHLD A22 P1-62					.25 .15	NO NO		7	
A 22B	2		P2-62 SHLD A22					.15 .25	NO NO		8	
A 22L			P1-61 P2-61					.15 .15	NO NO		7 8	
A 22R			P1-60 P2-60					.15 .15	NO NO		7 8	
A 23	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 23L			P1-66 P2-66					.15 .15	NO NO		7 8	
A 23R			P1-65 P2-65					.15 .15	NO NO		7 8	
A 24	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 24L			P1-68 P2-68					.15 .15	NO NO		7 8	
A 24R			P1-67 P2-67					.15 .15	NO NO		7 8	
A 25	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 25L			P1-70 P2-70					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR ≠A
SHEET 12 OF 15

MIL 2084 4-63

CABLE ASSEMBLY W138 6900040 ≠A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P1-69 P2-69					.15 .15	NO NO		7 8	
A 26	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 26L			P1-22 P2-22					.15 .15	NO NO		7 8	
A 26R			P1-21 P2-21					.15 .15	NO NO		7 8	
A 27	2		P1-85 P2-85					.15 .15	NO NO		7 8	
A 28	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 28L			P1-24 P2-24					.15 .15	NO NO		7 8	
A 28R			P1-23 P2-23					.15 .15	NO NO		7 8	
A 29	1				3.80 3.30	3.50 3.00				B,7 B,7	13 13	
A 29L			P1-26 P2-26					.15 .15	NO NO		7 8	
A 29R			P1-25 P2-25					.15 .15	NO NO		7 8	
A 30	2		P1-27 P2-27					.15 .15	NO NO		7 8	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900040
SCALE - NONE
REV LTR ≠A
SHEET 13 OF 15

MIL 2084 4-63

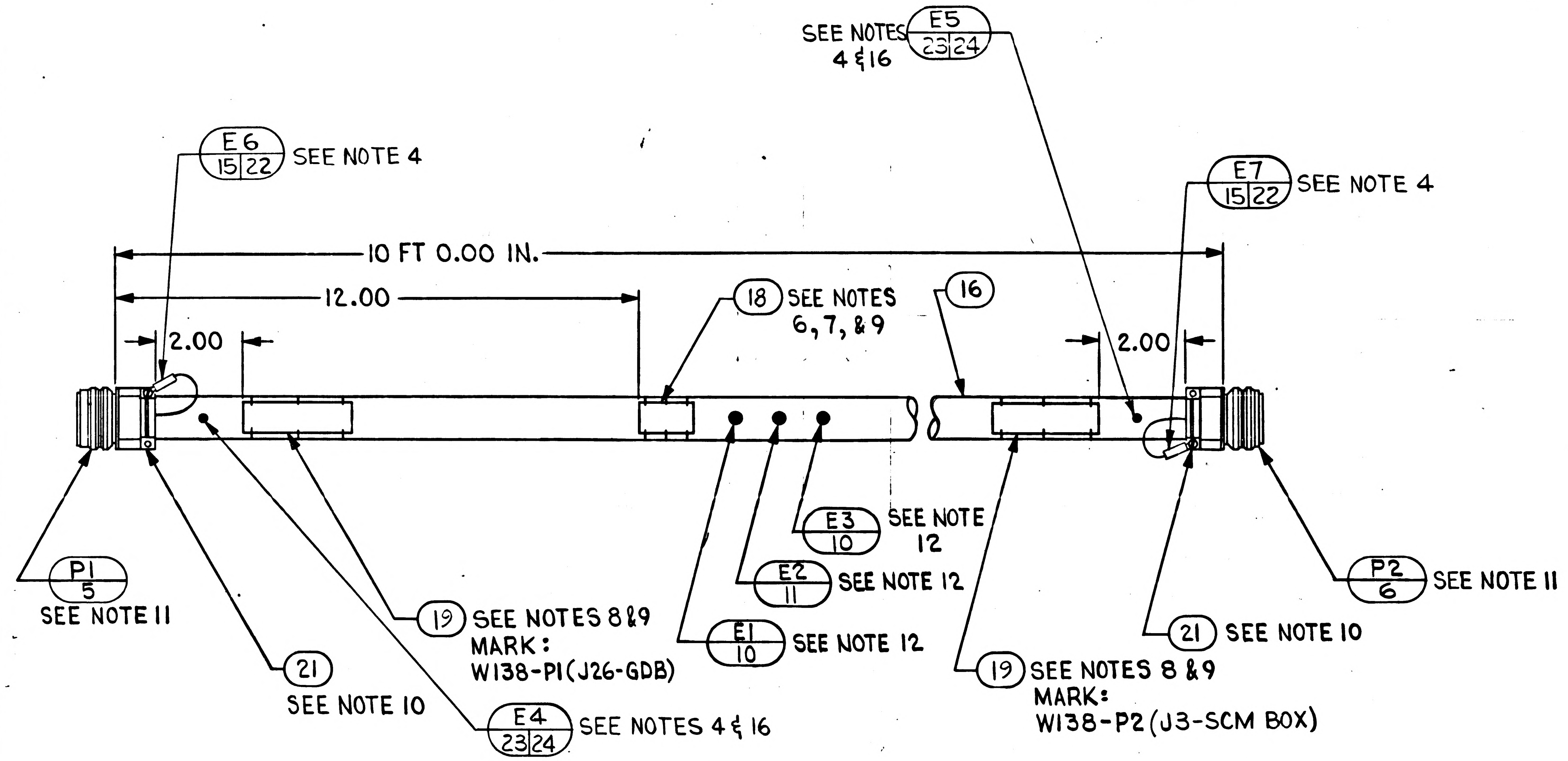
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31	2		E3					.25	NO			
			P1-33					.15	NO		7	
A 32	1				4.30	4.00				8,7	13	
					3.80	3.50				8,7	13	
A 32L			P1-81					.15	NO		7	
			P2-81					.15	NO		8	
A 32R			P1-80					.15	NO		7	
			P2-80					.15	NO		8	
A 33	1				4.30	4.00				8,7	13	
					3.80	3.50			NO	8,7	13	
A 33L			P1-83					.15	NO		7	
			P2-83					.15	NO		8	
A 33R			P1-82					.15	NO		7	
			P2-82					.15	NO		8	
A 34	2		P1-84					.15	NO		7	
			P2-84					.15	NO		8	
A 35	25		E4-BB					.16	NO			
			E6					.38	NO			
A 36	25		E5-BB					.16	NO			
			E7					.38	NO			

SIZE	CODE IDENT NO.	
A	99974	6900040
SCALE-NONE	REV LTR C	SHEET 14 OF 15

MIL 2084 9-65

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD			

REVISIONS TDRR 23807


10 FT 0.00 IN.
12.00
2.00
2.00
E6 15 22 SEE NOTE 4
E5 23 24 SEE NOTES 4 & 16
E7 15 22 SEE NOTE 4
18 SEE NOTES 6, 7, & 9
16
P1 5 SEE NOTE 11
21 SEE NOTE 10
19 SEE NOTES 8 & 9 MARK: W138-P1(J26-GDB)
E4 23 24 SEE NOTES 4 & 16
E1 10 SEE NOTE 12
E2 11 SEE NOTE 12
E3 10 SEE NOTE 12
19 SEE NOTES 8 & 9 MARK: W138-P2(J3-SCM BOX)
21 SEE NOTE 10
P2 6 SEE NOTE 11

NEXT ASSY	USED ON
2900043-011	1900030

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .05 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.B. Becker DATE 16AUG65
CHECKED Moore 17AUG65
APPROVAL E. Swanson 17Aug65
APPROVAL 10/26/65
NASA APPROVAL A.C. METZGER
MIT APPROVAL 4Nov65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL
PURPOSE, ELECTRICAL-W138

CODE IDENT NO. 99974
SIZE C
6900040
SCALE 1:2
SHEET 15 OF 15

MIL 1077C—P

APPLICATION	
NEXT ASSY	USED ON
6900043-011	1900030

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER MXC 206259	20 OCT 65	JW EF
B	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	WRB CW

REV	B	B	B	B	B	B
SHEET	20	21	22	23	24	25

REV STATUS OF SHEETS	REV	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Janowiak 30 AUG 65 DATE
CHECKED 31 AUG 65
APPROVAL C W Wise 31 Aug 65
APPROVAL 10/26/65
A. C. METZGER
NASA APPROVAL
MIT APPROVAL 4 Nov 65
CONTRACT NAS 9-497

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED-W142

CODE IDENT NO.	SIZE		REV
99974	A	6900041	B

SCALE NONE

SHEET 1 OF 25

NOTE GENERAL NOTES

NUMBER DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER -
    A - ND1002071
    B - ND1002032
    C - SEE CONFIGURATION SHEET FIG. 1

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 ASSEMBLE PER ND1002032.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.

6 APPLY LEAD IDENTIFICATION TO SLEEVES PER ND1002019.

7 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

8 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

9 SECURE TO CABLE USING ITEM 27. MARKING TO READ AWAY FROM CONNECTOR

10 SERIALIZE PER ND1002023

11 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 28 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP.

12 MARK IDENTIFICATION BANDS AS NOTED IN TABLE I, .12 INCH HIGH COLOR BLACK PER ND1002019. CENTRALIZE

13 LOCATE IDENTIFICATION SLEEVES ADJACENT TO SOLDER SLEEVES

14 APPLY GLYPTAL TO LEAD ENDS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE - NONE REV LTR A SHEET 2 OF 25

NOTE GENERAL NOTES

NUMBER DESCRIPTION

15 IN CIRCUIT POINT FIELD ---
    I - INNER CONTACT
    O - OUTER CONTACT

16 TYPICAL INSTALLATION OF CONTACTS
    A - ASSEMBLE OUTER HYRING OVER BOTH LEADS
    B - ASSEMBLE OUTER SLEEVE, INNER SLEEVE, AND INNER CONTACT TO INNER LEAD IN ORDER LISTED. CRIMP CONTACT.
    C - ASSEMBLE OUTER CONTACT TO INNER CONTACT. SLIDE OUTER SLEEVE OVER OUTER CONTACT UNTIL SEATED. LAY OUTER LEAD AGAINST OUTER CONTACT IN OPEN SECTION OF OUTER SLEEVE.
    D - SLIDE HYRING FORWARD AGAINST SPRING AND CRIMP.

17 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
    A - FROM END SHIELD
    B - TO END SHIELD
    E - GRAY
    L - WHITE WITH BLUE TRACER
    R - WHITE WITH RED TRACER
    W - WHITE
    X - CCAX OUTER CONDUCTOR
    Y - WHITE WITH YELLOW TRACER

18 E1 THRU E9 STAGGER TO REDUCE BULK.

19 SPOT TIE AT 4.00 INCH INTERVALS WITHIN DESIGNATED DIMENSION.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE - NONE REV LTR A SHEET 3 OF 25

NOTE GENERAL NOTES

NUMBER DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE - NONE REV LTR A SHEET 4 OF 25

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900041-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED,
	2	1	6900041-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT.,
	3	1	6900041-003	WIRE, ND1002181, TYPE 1, CLASS 4, WHT. JKT., 24AWG, WHT.,
	4	1	6900041-004	WIRE, ND1002181, TYPE 3, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED, WHT/YEL,
	5	1	6900041-005	WIRE, ND1002181, TYPE 1, CLASS 1, 20AWG, WHT.,
	6	1	6900041-006	WIRE, ND1002181, TYPE 1, CLASS 1, 24AWG, WHT.,
	7	1	6900041-007	WIRE, COAXIAL, MIL-D-17/69A RG 188AU,
	8	1	6900041-008	ZIPPER TUBING PER ND1002155, TYPE III, AL, 1.250 INCH DIA., 9.00 FT. TOTAL LENGTH
7	9	1	1897336-001	CONNECTOR, PLUG ELEC.
7	10	1	1897215-011	CONNECTOR, PLUG ELEC.
7	11	1	1897215-012	CONNECTOR, PLUG ELEC.
7	12	49	1016369-711	INNER SUPPORTING SLEEVE
7	13	51	1016369-188	CONTACT, INNER MALE
7	14	98	1016369-588	HYRING
7	15	96	1016369-713	OUTER SUPPORTING SLEEVING
7	16	51	1016369-488	CONTACT, OUTER FEMALE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE - NONE REV LTR A SHEET 5 OF 25

CABLE ASSEMBLY W142 6900041 B

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	AR	1010655- 1	GLYPTAL, BLUE
7	18	73	1010490-228	INSULATION SLEEVING, ELEC.
7	19	47	1016369-712	INNER SUPPORTING SLEEVE
7	20	49	1016369-388	CONTACT, INNER FEMALE
7	21	49	1016369-288	CONTACT, OUTER MALE
7	22	5	1010763- 1	SOLDER SLEEVE
7	23	43	1010763- 2	SOLDER SLEEVE
7	24	14	1010490-234	INSULATION SLEEVING, ELEC.
7	25	1	1016128-011	BAND, IDENTIFICATION
7	26	3	1016128-041	BAND, IDENTIFICATION
	27	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES2732 NO. 18)
	28	AR	1901390	FILLER TAPE
7	29	6	1016369-421	CONTACT, FEMALE
7	30	26	1010490-232	INSULATION SLEEVING, ELEC
7	31	27	1016369-420	CONTACT, MALE
7	32	2	1016282- 24	GROMMET
7	33	2	1897330-001	CLAMP, CABLE
7	34	2	1897331-001	ADAPTER, CABLE CLAMP

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 6 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18, 14 18, 14	
A	1A	2	SHLD A1 P1-B5					.25 .18	NO NO		31	
A	1L		P1-C5/O P2-17/O				.32 .22	.23 .23	NO NO		21 16	SEE NOTE 16TYP
A	1R		P1-C5/I P2-17/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A	2	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18, 14 18, 14	
A	2A	2	SHLD A2 P1-A6					.25 .18	NO NO		31	
A	2L		P1-A5/O P2-18/O				.32 .22	.23 .23	NO NO		21 16	
A	2R		P1-A5/I P2-18/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A	3	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18, 14 18, 14	
A	3A	2	SHLD A3 P1-C6					.25 .18	NO NO		31	
A	3L		P1-B6/O P2-19/O				.32 .22	.23 .23	NO NO		21 16	
A	3R		P1-B6/I P2-19/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 7 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	4	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18, 14 18, 14	
A	4A	2	SHLD A4 P1-E6					.25 .18	NO NO		31	
A	4L		P1-D6/O P2-20/O				.32 .22	.23 .23	NO NO		21 16	
A	4R		P1-D6/I P2-20/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A	5	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18, 14 18, 14	
A	5A	2	SHLD A5 P1-G6					.25 .18	NO NO		31	
A	5L		P1-F6/O P2-21/O				.32 .22	.23 .23	NO NO		21 16	
A	5R		P1-F6/I P2-21/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A	6	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18, 14 18, 14	
A	6A	2	SHLD A6 P1-J6					.25 .18	NO NO		31	
A	6L		P1-H6/O P2-22/O				.32 .22	.23 .23	NO NO		21 16	
A	6R		P1-H6/I P2-22/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 8 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	7	1			2.80 2.80	2.50 2.50				A,6B B,7	23, 18, 14 18, 14	
A	7A	2	SHLD A7 P1-N5					.25 .18	NO NO		31	
A	7L		P1-P5/O P2-23/O				.32 .22	.23 .23	NO NO		21 16	
A	7R		P1-P5/I P2-23/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A	8	1			2.80 2.80	2.50 2.50				A,6B B,7	23, 18, 14 18, 14	
A	8A	2	SHLD A8 P1-H5					.25 .18	NO NO		31	
A	8L		P1-J5/O P2-24/O				.32 .22	.23 .23	NO NO		21 16	
A	8R		P1-J5/I P2-24/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A	9	1			2.80 2.80	2.50 2.50				A,6A B,7	23, 18, 14 18, 14	
A	9A	2	SHLD A9 E3					.25 .25	NO NO			
A	9L		P1-K3/O P2-28/O				.32 .22	.23 .23	NO NO		21 16	
A	9R		P1-K3/I P2-28/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 9 OF 25

MIL 2084 4-63

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10	1				2.80 2.80	2.50 2.50				A,6A B,7	23, 18, 14 18, 14	
A 10A	2		SHLD A10 E3					.25 .25	NO NO			
A 10L			P1-M3/0 P2-29/0				.32 .22	.23 .23	NO NO		21 16	
A 10R			P1-M3/I P2-29/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 11	1				2.80 2.80	2.50 2.50				A,6A B,7	23, 18, 14 18, 14	
A 11A	2		SHLD A11 E3					.25 .25	NO NO			
A 11L			P1-N3/0 P2-30/0				.32 .22	.23 .23	NO NO		21 16	
A 11R			P1-N3/I P2-30/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 12	3				2.98 3.30	2.68 3.00				B,7	30	
A 12W			P1-A4/0 P2-1/0					.23 .23	NO NO		21 16	USE WITH P1-A4/I USE WITH P2-1/I
A 13	3				3.30 3.30	3.00 3.00				A,6A B,7	23, 18, 14 30, 14	
A 13A	2		SHLD A12/13 E1					.25 .25	NO NO	C		

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 10 OF 25

MIL 2084 4-63

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13W			P1-A4/I P2-1/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 14	6		P1-C4/0 P2-2/0					.23 .23	NO NO		14, 21 14, 16	USE WITH P1-C4/I USE WITH P2-2/I
A 15	3				3.30 3.30	3.00 3.00				A,6A B,7	22, 30 30	
A 15A	2		SHLD A15 E1					.25 .25	NO NO			
A 15W			P1-C4/I P2-2/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 16	3				2.98 3.30	2.68 3.00				B,7	30	
A 16W			P1-D4/0 P2-3/0					.23 .23	NO NO		21 16	USE WITH P1-D4/I USE WITH P2-3/I
A 17	3				3.30 3.30	3.00 3.00				A,6A B,7	23, 18, 14 30, 14	
A 17A	2		SHLD A16/17 E1					.25 .25	NO NO	C		
A 17W			P1-D4/I P2-3/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 18	6		P1-H4/0 P2-7/0					.23 .23	NO NO		14, 21 14, 16	USE WITH P1-H4/I USE WITH P2-7/I
A 19	6		P1-H4/I P2-7/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 11 OF 25

MIL 2084 4-63

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 20	6		P1-J4/0 P2-8/0					.23 .23	NO NO		14, 21 14, 16	USE WITH P1-J4/I USE WITH P2-8/I
A 21	6		P1-J4/I P2-8/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 22	6		P1-N4 P2-9/0					.18 .23	NO NO		31 14, 16	USE WITH P2-9/I
A 23	3				3.30 3.30	3.00 3.00				A,6A B,7	22, 30 30	
A 23A	2		SHLD A23 E2					.25 .25	NO NO			
A 23W			P1-E4 P2-9/I					.18 .22	NO NO		31 15, 12, 13	
A 24	3				3.48 3.80	3.18 3.50				B,7	30	
A 24W			P1-F4/0 P2-10/0					.23 .23	NO NO		21 16	USE WITH P1-F4/I USE WITH P2-10/I
A 25	3				3.80 3.80	3.50 3.50				A,6A B,7	23, 18, 14 30, 14	
A 25A	2		SHLD A24/25 E2					.25 .25	NO NO	C		
A 25W			P1-F4/I P2-10/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 26	3				3.48 3.80	3.18 3.50				B,7	30	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 12 OF 25

MIL 2084 4-63

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 26W			P1-B4/0 P2-11/0					.23 .23	NO NO		21 16	USE WITH P1-B4/I USE WITH P2-11/I
A 27	3				3.80 3.80	3.50 3.50				A,6A B,7	23, 18, 14 30, 14	
A 27A	2		SHLD A26/27 E1					.25 .25	NO NO	C		
A 27W			P1-B4/I P2-11/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 28	3				3.48 3.80	3.18 3.50				B,7	30	
A 28W			P1-S4/0 P2-15/0					.23 .23	NO NO		21 16	USE WITH P1-S4/I USE WITH P2-15/I
A 29	3				3.80 3.80	3.50 3.50				A,6A B,7	23, 18, 14 30, 14	
A 29A	2		SHLD A28/29 E7					.25 .25	NO NO	C		
A 29W			P1-S4/I P2-15/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 30	1				3.80 3.80	3.50 3.50				A,6A B,7	23, 18, 14 18, 14	
A 30A	2		SHLD A30 E7					.25 .25	NO NO			
A 30L			P1-T4/0 P2-16/0				.32 .22	.23 .23	NO NO		21 16	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 13 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 #B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 30R			P1-T4/I P2-16/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 31	6		P1-M6 P2-42					.18 .18	NO NO		31 29	
A 32	3				3.80 3.80	3.50 3.50				A,6A B,7	22, 30 30	
A 32A	2		SHLD A32 E6					.25 .25	NO NO			
A 32W			P1-K6/I P2-31/I				 .33	.22 .22	NO NO		15, 19, 20 15, 12, 13	USE WITH P1-K6/O USE WITH P2-3/I
A 33	6		P1-K6/O P2-31/O					.23 .23	NO NO		14, 21 14, 16	
A 34	6		P1-U4/O P2-33/O					.23 .23	NO NO		14, 21 14, 16	USE WITH P1-U4/I USE WITH P2-33/I
A 35	6		P1-U4/I P2-33/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 36	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18, 14 18, 14	
A 36A	2		SHLD A36 P1-W4					.25 .18	NO NO		 31	
A 36L			P1-V4/O P2-34/O				.32 .22	.23 .23	NO NO		21 16	
A 36R			P1-V4/I P2-34/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 14 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 #B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18, 14 18, 14	
A 37A	2		SHLD A37 P1-X5					.25 .18	NO NO		 31	
A 37L			P1-X4/O P2-35/O				.32 .22	.23 .23	NO NO		21 16	
A 37R			P1-X4/I P2-35/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 38	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18, 14 18, 14	
A 38A	2		SHLD A38 P1-V5					.25 .18	NO NO		 31	
A 38L			P1-W5/O P2-36/O				.32 .22	.23 .23	NO NO		21 16	
A 38R			P1-W5/I P2-36/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 39	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18, 14 18, 14	
A 39A	2		SHLD A39 P1-T5					.25 .18	NO NO		 31	
A 39L			P1-U5/O P2-37/O				.32 .22	.23 .22	NO NO		21 16	
A 39R			P1-U5/I P2-37/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 15 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 #B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 40	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18, 14 18, 14	
A 40A	2		SHLD A4C P1-R5					.25 .18	NO NO		 31	
A 40L			P1-S5/O P2-38/O				.32 .22	.23 .23	NO NO		21 16	
A 40R			P1-S5/I P2-38/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 41	3				2.98 3.50	2.68 3.00				 B,7	 30	
A 41W			P1-P3/O P3-5/O					.23 .23	NO NO		21 16	USE WITH P1-P3/I USE WITH P3-5/I
A 42	3				3.30 3.30	3.00 3.00				A,6A B,7	23, 18, 14 30, 14	
A 42A	2		SHLD A41/42 E4					.25 .25	NO NO	C		
A 42W			P1-P3/I P3-5/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 43	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18, 14 18, 14	
A 43A	2		SHLD A43 E4					.25 .25	NO NO			
A 43L			P1-R3/O P3-6/O				.32 .22	.23 .23	NO NO		21 16	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 16 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 #B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43R			P1-R3/I P3-6/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 44	1				4.80 4.80	4.50 4.50				B,7 B,7	18, 14 18, 14	
A 44L			P1-S3/O P3-4/O				.32 .22	.23 .23	NO NO		21 16	
A 44R			P1-S3/I P3-4/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 45	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18, 14 18, 14	
A 45A	2		SHLD A45 E6					.25 .25	NO NO			
A 45L			P1-T3/O P3-25/O				.32 .22	.23 .23	NO NO		21 16	
A 45R			P1-T3/I P3-25/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 46	4				4.80 4.80	4.50 4.50				A,6A B,7	23, 18, 14 18, 14	
A 46A	2		SHLD A46 E6					.25 .25	NO NO			
A 46L			P1-W6/O P3-23/O				.32 .22	.23 .23	NO NO		21 16	
A 46R			P1-W6/I P3-23/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900041
SCALE-NONE
REV LTR A
SHEET 17 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 4B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 46Y			P1-X6					.18	NO		31	
			P3-26					.18	NO		29	
A 47	1				4.80	4.50				B,7	18, 14	
					4.80	4.50				B,7	18, 14	
A 47L			P1-A3/O				.32	.23	NO		21	
			P3-31/O				.22	.23	NO		16	
A 47R			P1-A3/I					.22	NO		15, 19, 20	
			P3-31/I					.22	NO		15, 12, 13	
A 48	1				4.80	4.50				A,6B	23, 18, 14	
					4.80	4.50				B,7	18, 14	
A 48A	2		SHLD A48					.25	NO			
			P1-C3					.18	NO		31	
A 48L			P1-B3/O				.32	.23	NO		21	
			P3-32/O				.22	.23	NO		16	
A 48R			P1-B3/I					.22	NO		15, 19, 20	
			P3-32/I					.22	NO		15, 12, 13	
A 49	1				4.80	4.50				A,6B	23, 18, 14	
					4.80	4.50				B,7	18, 14	
A 49A	2		SHLD A49					.25	NO			
			P1-E3					.18	NO		31	
A 49L			P1-D3/O				.32	.23	NO		21	
			P3-33/O				.22	.23	NO		16	
A 49R			P1-D3/I					.22	NO		15, 19, 20	
			P3-33/I					.22	NO		15, 12, 13	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A	6900041	
SCALE - NONE	REV LTR A	SHEET 18 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 6B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 50	1				5.30	5.00				A,6B	23, 18, 14	
					5.30	5.00				B,7	18, 14	
A 50A	2		SHLD A50					.25	NO			
			P1-G3					.18	NO		31	
A 50L			P1-F3/O				.32	.23	NO		21	
			P3-34/O				.22	.23	NO		16	
A 50R			P1-F3/I					.22	NO		15, 19, 20	
			P3-34/I					.22	NO		15, 12, 13	
A 51	1				5.30	5.00				A,6B	23, 18, 14	
					5.30	5.00				B,7	18, 14	
A 51A	2		SHLD A51					.25	NO			
			P1-J3					.18	NO		31	
A 51L			P1-H3/O				.32	.23	NO		21	
			P3-35/O				.22	.23	NO		16	
A 51R			P1-H3/I					.22	NO		15, 19, 20	
			P3-35/I					.22	NO		15, 12, 13	
A 52	5		P1-U3					.18	NO		31	
			E6					.25	NO			
A 53	5		E6					.25	NO			
			P3-30					.18	NO		29	
A 54	5		P1-V3					.18	NO		31	
			E8					.25	NO			
A 55	5		E8					.25	NO			
			P3-21					.18	NO		29	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A	6900041	
SCALE - NONE	REV LTR A	SHEET 19 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 4B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 56	1				5.30	5.00				A,6B	23, 18, 14	
					5.30	5.00				B,7	18, 14	
A 56A	2		SHLD A56					.25	NO			
			P1-F5					.18	NO		31	
A 56L			P1-G5/O				.32	.23	NO		21	
			P2-25/O				.22	.23	NO		16	
A 56R			P1-G5/I					.22	NO		15, 19, 20	
			P2-25/I					.22	NO		15, 12, 13	
A 57	1				5.30	5.00				A,6B	23, 18, 14	
					5.30	5.00				B,7	18, 14	
A 57A	2		SHLD A57					.25	NO			
			P1-D5					.18	NO		31	
A 57L			P1-E5/O				.32	.23	NO		21	
			P2-26/O				.22	.23	NO		16	
A 57R			P1-E5/I					.22	NO		15, 19, 20	
			P2-26/I					.22	NO		15, 12, 13	
A 58	1				5.30	5.00				B,7	18, 14	
					5.30	5.00				B,7	18, 14	
A 58L			P1-G4/O				.32	.23	NO		21	
			P2-4/O				.22	.23	NO		16	
A 58R			P1-G4/I					.22	NO		15, 19, 20	
			P2-4/I					.22	NO		15, 12, 13	
A 59	3				5.30	5.00				A,6A	22, 30	
					5.30	5.00				B,7	30	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A	6900041	
SCALE - NONE	REV LTR A	SHEET 20 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 5B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 59A	2		SHLD A59					.25	NO			
			E5					.25	NO			
A 59W			P1-P4					.18	NO		31	
			P2-14/I					.22	NO		15, 12, 13	
A 60	6		FREE END									SEE NOTE 14
			P2-14/O					.23	NO		14, 16	
A 61	3				3.48	3.18						
					3.80	3.50				B,7	30	
A 61W			P1-R4/O					.23	NO		21	USE WITH P1-R4/I
			P2-12/O					.23	NO		16	USE WITH P2-12/I
A 62	3				3.80	3.50				A,6A	23, 18, 14	
					3.80	3.50				B,7	30, 14	
A 62A	2		SHLD A61/62					.25	NO	C		
			E5					.25	NO			
A 62W			P1-R4/I					.22	NO		15, 19, 20	
			P2-12/I					.22	NO		15, 12, 13	
A 63	6		P1-N6/O					.23	NO		14, 21	
			P2-41/O					.23	NO		14, 16	
A 64	6		P1-N6/I					.22	NO		15, 19, 20	
			P2-41/I					.22	NO		15, 12, 13	
A 65	7				.56	.25				B,9	30	
					.56	.25				B,9	30	
A 65E			P1-P6					.18	NO		20	
			P2-40					.18	NO		13	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A	6900041	
SCALE - NONE	REV LTR A	SHEET 21 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 #B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 65X			P1-P6SHLD P2-40SHLD								14, 21 14, 16	
A 66	7				.56 .56	.25 .25				B,9 B,9	30 30	
A 66E			P1-R6 P2-39					.18 .18	NO NO		20 13	
A 66X			P1-R6SHLD P2-39SHLD								14, 21 14, 16	
A 67	1				5.80 5.80	5.50 5.50				A,6B B,7	23, 18, 14 18, 14	
A 67A	2		SHLD A67 P1-T6					 .18	 NO		 31	
A 67L			P1-S6/O P2-43/O				.32 .22	.23 .23	NO NO		21 16	
A 67R			P1-S6/I P2-43/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 68	1				5.80 5.80	5.50 5.50				B,7 B,7	18, 14 18, 14	
A 68L			P1-U6/O P2-45/O				.32 .22	.23 .23	NO NO		21 16	
A 68R			P1-U6/I P2-45/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 69	1				5.80 5.80	5.50 5.50				B,7 B,7	18, 14 18, 14	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900041
SCALE-NONE | REV LTR A | SHEET 22 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 #B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 69L			P1-V6/O P2-46/O				.32 .22	.23 .23	NO NO		21 16	
A 69R			P1-V6/I P2-46/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 70	5		E5 E6					.25 .25	NO NO			
A 71	5		E5 P2-13					.25 .16	NO NO		 29	
A 72	5		E1 E2					.25 .25	NO NO			
A 73	5		E2 E8					.25 .25	NO NO			
A 74	5		E2 E9					.25 .25	NO NO			
A 75	5		E3 E4					.25 .25	NO NO			
A 76	5		E3 E8					.25 .25	NO NO			
A 77	5		E4 E9					.25 .25	NO NO			
A 78	5		E7 E9					.25 .25	NO NO			
A 79	5		E9 P2-44					.25 .16	NO NO		 29	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900041
SCALE-NONE | REV LTR A | SHEET 23 OF 25

MIL 2084 4-63

CABLE ASSEMBLY W142 6900041 #B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 80	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18, 14 18, 14	
A 80A	2		SHLD A80 E8					.25 .25	NO NO			
A 80L			P1-W3/O P3-1/O				.32 .22	.23 .23	NO NO		21 16	
A 80R			P1-W3/I P3-1/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	
A 81	6		P1-B2/I P2-47/I					.22 .22	NO NO		15, 19, 20 15, 12, 13	USE WITH P1-B2/O USE WITH P2-47/O
A 82	6		P1-B2/O P2-47/O					.23 .23	NO NO		14, 21 14, 16	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900041
SCALE-NONE | REV LTR A | SHEET 24 OF 25

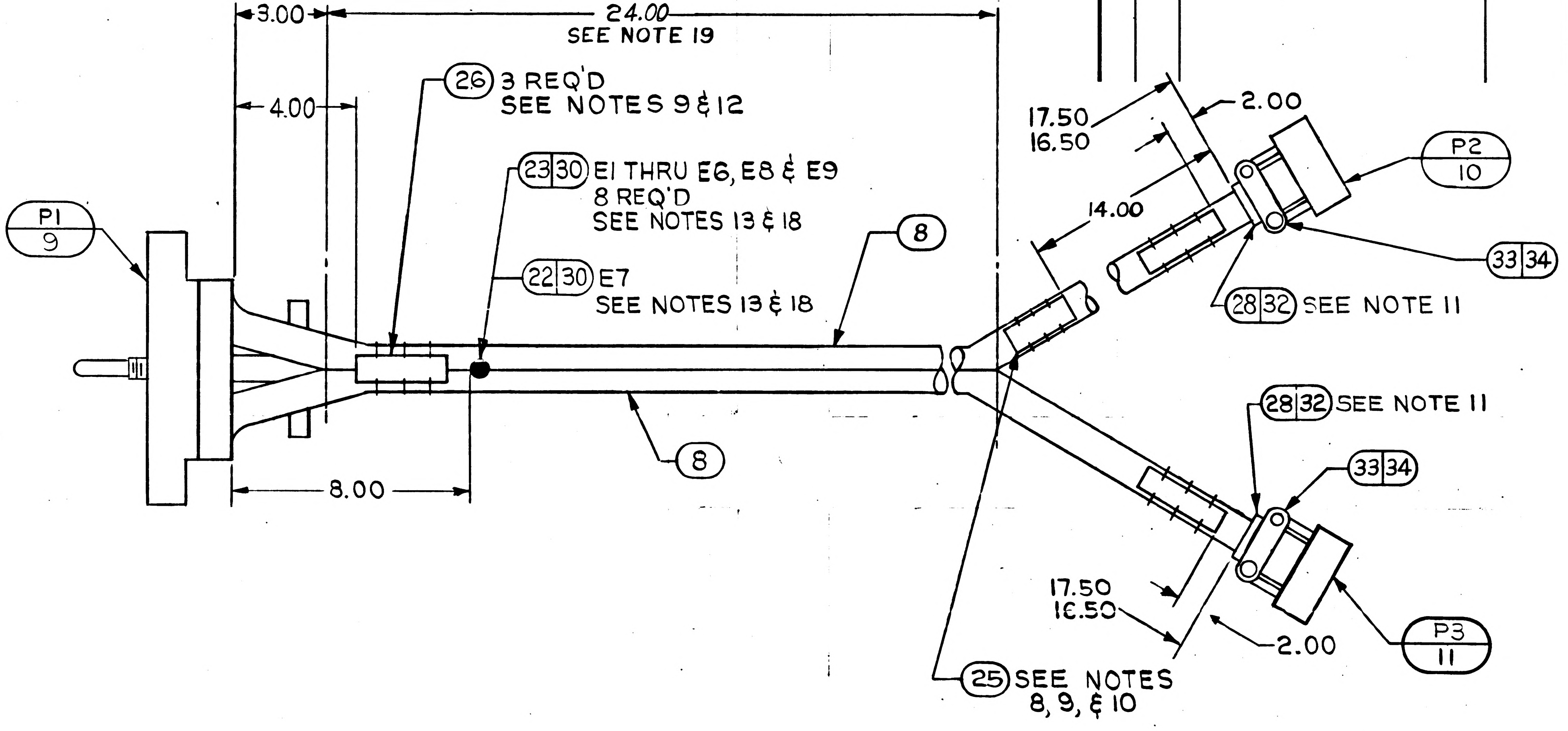
MIL 2084 4-63

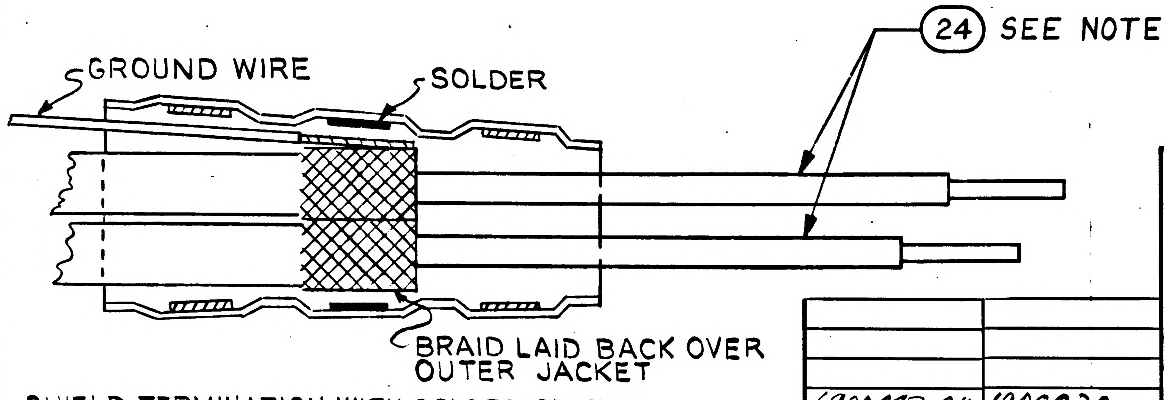
TABLE I

PLUG NO.	MARKING
P1	W142-P1 (W157-P2)(J3-SCM)
P2	W142-P2 (J1-TPA2)
P3	W142-P3 (J2-TPA2)

REVISIONS TDRR 23507

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD			


3.00
24.00
SEE NOTE 19
4.00
(26) 3 REQ'D
SEE NOTES 9 & 12
(23|30) E1 THRU E6, E8 & E9
8 REQ'D
SEE NOTES 13 & 18
(22|30) E7
SEE NOTES 13 & 18
P1
9
(8)
(8)
8.00
17.50
16.50
2.00
14.00
P2
10
(33|34)
(28|32) SEE NOTE 11
(28|32) SEE NOTE 11
(33|34)
17.50
16.50
2.00
P3
11
(25) SEE NOTES
8, 9, & 10


(24) SEE NOTE 6
GROUND WIRE
SOLDER
BRAID LAID BACK OVER OUTER JACKET

SHIELD TERMINATION WITH SOLDER SLEEVE

FIGURE 1

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .50 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Janowiak DATE 30 AUG 65
CHECKED Molyé 10 SEP 65
APPROVAL E. Swanson 30 Sept 65
APPROVAL L. Gelman 10/26/65
NASA APPROVAL A. C. Metcalf
MIT APPROVAL 4 Nov 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED-W142

CODE IDENT NO. 99974
SIZE C
6900041
SCALE NONE
SHEET 25 OF 25

B

MIL 1077C—P

CABLE ASSEMBLY W142 6900041 C

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER - A - ND1002071 B - ND1002032 C - SEE CONFIGURATION SHEET FIG. 1
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	ASSEMBLE PER ND1002032.
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.
6	APPLY LEAD IDENTIFICATION TO SLEEVES PER ND1002019.
7	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
8	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
9	SECURE TO CABLE USING ITEM 27. MARKING TO READ AWAY FROM CONNECTOR
10	SERIALIZE PER ND1002023
11	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 28 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP.
12	MARK IDENTIFICATION BANDS AS NOTED IN TABLE I, .12 INCH HIGH COLOR BLACK PER ND1002019. CENTRALIZE
13	LOCATE IDENTIFICATION SLEEVES ADJACENT TO SOLDER SLEEVES
14	APPLY GLYPTAL TO LEAD ENDS

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 2 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

NOTE NUMBER	GENERAL NOTES DESCRIPTION
15	IN CIRCUIT POINT FIELD --- I - INNER CONTACT O - OUTER CONTACT
16	TYPICAL INSTALLATION OF CONTACTS A - ASSEMBLE OUTER HYRING OVER BOTH LEADS B - ASSEMBLE OUTER SLEEVE, INNER SLEEVE, AND INNER CONTACT TO INNER LEAD IN ORDER LISTED. CRIMP CONTACT. C - ASSEMBLE OUTER CONTACT TO INNER CONTACT. SLIDE OUTER SLEEVE OVER OUTER CONTACT UNTIL SEATED. LAY OUTER LEAD AGAINST OUTER CONTACT IN OPEN SECTION OF OUTER SLEEVE. D - SLIDE HYRING FORWARD AGAINST SPRING AND CRIMP.
17	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD B - TO END SHIELD E - GRAY L - WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER W - WHITE X - COAX OUTER CONDUCTOR Y - WHITE WITH YELLOW TRACER
18	E1 THRU E9 STAGGER TO REDUCE BULK.
19	SPOT TIE AT 4.00 INCH INTERVALS WITHIN DESIGNATED DIMENSION.
20	SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE E11-B, E13-B, AND E17-B RESPECTIVELY.
21	ZIPPER TUBING SHALL HAVE Z TYPE TRACK AND ALUMINUM FOIL SHALL BE .003 + - .001 THICK.

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 3 OF ~~25~~ 27

MIL 2084 9-65

APPLICATION NEXT ASSY	USED ON
6900043-011	1900030

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES REV B WITH CHANGE PER TDRR 26105	6 JAN 66	JJJ JAC

REV	C	C	C	C	C	C	C	C											
SHEET	20	21	22	23	24	25	26	27											
REV STATUS REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
OF SHEETS SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN Janowick DATE 30 AUG 65
CHECKED MOLYE 31 AUG 65
APPROVAL C.W. WISE 31 AUG 65
APPROVAL J. Mulstan 2-7-66
NASA APPROVAL E. C. METZGER
MIT APPROVAL
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W142

CODE IDENT NO.	SIZE		REV
99974	A	6900041	C
SCALE -		SHEET 1 OF 27	

CABLE ASSEMBLY W142 6900041 C

NOTE NUMBER GENERAL NOTES DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 4 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
7	15	53	1016369-713	OUTER SUPPORTING SLEEVING
7	16	53	1016369-488	CONTACT, OUTER FEMALE
	17	AR	1010655- 1	GLYPTAL, BLUE
7	18	73	1010490-228	INSULATION SLEEVING, ELEC.
	19		1016369-712	DELETED
	20		1016369-388	DELETED
	21		1016369-288	DELETED
7	22	11	1010763- 1	SOLDER SLEEVE
7	23	45	1010763- 2	SOLDER SLEEVE
7	24	14	1010490-234	INSULATION SLEEVING, ELEC.
7	25	1	1016128-011	BAND, IDENTIFICATION
7	26	3	1016128-041	BAND, IDENTIFICATION
	27	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES2732)
	28	AR	1901390	FILLER TAPE
7	29	4	1016369-421	CONTACT, FEMALE
7	30	40	1010490-232	INSULATION SLEEVING, ELEC
7	31	27	1016369-420	CONTACT, MALE
7	32	2	1016282- 24	GROMMET

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 6 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
7	33	2	1897330-001	CLAMP, CABLE
7	34	2	1897331-001	ADAPTER, CABLE CLAMP
7	35	4	1016006-002	SPLICE REDUCER
7	36	4	1010490-258	INSULATION SLEEVING, ELEC.
7	37	125	1016369-424	CONTACT, MALE
7	38	1	1897391	CLAMP, STRAIN RELIEF
7	39	4	1015902- 49	LUG, TERMINAL

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 7 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900041-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED, 132 FT. TOTAL LENGTH.
	2	1	6900041-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT., 160 FT. TOTAL LENGTH.
	3	1	6900041-003	WIRE, ND1002181, TYPE 1, CLASS 4, WHT. JKT., 24AWG, WHT., 68 FT. TOTAL LENGTH.
	4	1	6900041-004	WIRE, ND1002181, TYPE 3, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED, WHT/YEL, 4 FT TOT LGTH
	5	1	6900041-005	WIRE, ND1002181, TYPE 1, CLASS 1, 20AWG, WHT., 44 FT. TOTAL LENGTH.
	6	1	6900041-006	WIRE, ND1002181, TYPE 1, CLASS 1, 24AWG, WHT., 61 FT TOTAL LENGTH.
	7	1	6900041-007	WIRE, COAXIAL, MIL-D-17/69A RG 188AU, 8 FT TOTAL LENGTH.
	8	1	6900041-008	ZIPPER TUBING PER ND1002155, TYPE III, 1.250 INCH DIA., 9.00 FT. TOTAL LENGTH
7	9	1	1897336-001	CONNECTOR, PLUG ELEC.
7	10	1	1897215-011	CONNECTOR, PLUG ELEC.
7	11	1	1897215-012	CONNECTOR, PLUG ELEC.
7	12	53	1016369-711	INNER SUPPORTING SLEEVE
7	13	53	1016369-188	CONTACT, INNER MALE
7	14	53	1016369-588	HYRING

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 5 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18 18, 14	
A	1A	2	SHLD A1 P1-B5					.25 .18	NO NO		37	
A	1L		P1-C7 P2-17/O				.22	.18 .23	NO NO		37 16	SEE NOTE 16 TYP
A	1R		P1-C5 P2-17/I					.18 .22	NO NO		37 15, 12, 13	
A	2	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18 18, 14	
A	2A	2	SHLD A2 P1-A6					.25 .18	NO NO		37	
A	2L		P1-B7 P2-18/O				.22	.18 .23	NO NO		37 16	
A	2R		P1-A5 P2-18/I					.18 .22	NO NO		37 15, 12, 13	
A	3	1			2.30 2.30	2.00 2.00				A,6B B,7	23, 18 18, 14	
A	3A	2	SHLD A3 P1-C6					.25 .18	NO NO		37	
A	3L		P1-B8 P2-19/O				.22	.18 .23	NO NO		37 16	
A	3R		P1-B6 P2-19/I					.18 .22	NO NO		37 15, 12, 13	

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 8 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 7	1				2.80 2.80	2.50 2.50				A,6B B,7	23, 18 18, 14	
A 7A	2		SHLD A7 P1-N5					.25 .18	NO NO		37	
A 7L			P1-P7 P2-23/O				.22	.18 .23	NO NO		37 16	
A 7R			P1-P5 P2-23/I					.18 .22	NO NO		37 15, 12, 13	
A 8	1				2.80 2.80	2.50 2.50				A,6B B,7	23, 18 18, 14	
A 8A	2		SHLD A8 P1-H5					.25 .18	NO NO		37	
A 8L			P1-J7 P2-24/O				.22	.18 .23	NO NO		37 16	
A 8R			P1-J5 P2-24/I					.18 .22	NO NO		37 15, 12, 13	
A 9	1				2.80 2.80	2.50 2.50				A,6A B,7	23, 18 18, 14	
A 9A	2		SHLD A9 E3					.25 .25	NO NO			
A 9L			P1-K1 P2-28/O				.22	.18 .23	NO NO		37 16	
A 9R			P1-K3 P2-28/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A	CODE IDENT NO. 99974	6900041
SCALE-NONE	REV LTR C	SHEET 10 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10	1				2.80 2.80	2.50 2.50				A,6A B,7	23, 18 18, 14	
A 10A	2		SHLD A10 E3					.25 .25	NO NO			
A 10L			P1-M2 P2-29/O				.22	.18 .23	NO NO		37 16	
A 10R			P1-M3 P2-29/I					.18 .22	NO NO		37 15, 12, 13	
A 11	1				2.80 2.80	2.50 2.50				A,6A B,7	23, 18 18, 14	
A 11A	2		SHLD A11 E3					.25 .25	NO NO			
A 11L			P1-N2 P2-30/O				.22	.18 .23	NO NO		37 16	
A 11R			P1-N3 P2-30/I					.18 .22	NO NO		37 15, 12, 13	
A 12	3				2.98 3.30	2.68 3.00				B,7	30	
A 12W			P1-A3 P2-1/O					.18 .23	NO NO		37 16	USE WITH P2-1/I
A 13	3				3.30 3.30	3.00 3.00				A,6A B,7	23 , 30 30, 14	
A 13A	2		SHLD A12/13 E1					.25 .25	NO NO	C		

SIZE A	CODE IDENT NO. 99974	6900041
SCALE-NONE	REV LTR C	SHEET 11 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 4	1				2.30 2.30	2.00 2.00				A,6B B,7	23, 18 18, 14	
A 4A	2		SHLD A4 P1-E6					.25 .18	NO NO		37	
A 4L			P1-D7 P2-20/O				.22	.18 .23	NO NO		37 16	
A 4R			P1-D6 P2-20/I					.18 .22	NO NO		37 15, 12, 13	
A 5	1				2.30 2.30	2.00 2.00				A,6B B,7	23, 18 18, 14	
A 5A	2		SHLD A5 P1-G6					.25 .18	NO NO		37	
A 5L			P1-F7 P2-21/O				.22	.18 .23	NO NO		37 16	
A 5R			P1-F6 P2-21/I					.18 .22	NO NO		37 15, 12, 13	
A 6	1				2.30 2.30	2.00 2.00				A,6B B,7	23, 18 18, 14	
A 6A	2		SHLD A6 P1-J6					.25 .18	NO NO		37	
A 6L			P1-H7 P2-22/O				.22	.18 .23	NO NO		37 16	
A 6R			P1-H6 P2-22/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A	CODE IDENT NO. 99974	6900041
SCALE-NONE	REV LTR C	SHEET 9 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13W			P1-A4 P2-1/I					.18 .22	NO NO		37 15, 12, 13	
A 14	6		P1-C1 P2-2/O					.18 .23	NO NO		37 14, 16	USE WITH P2-2/I
A 15	3				3.30 3.30	3.00 3.00				A,6A B,7	22, 30 30	
A 15A	2		SHLD A15 E1					.25 .25	NO NO			
A 15W			P1-C4 P2-2/I					.18 .22	NO NO		37 15, 12, 13	
A 16	3				2.98 3.30	2.68 3.00				B,7	30	
A 16W			P1-D2 P2-3/O					.18 .23	NO NO		37 16	USE WITH P2-3/I
A 17	3				3.30 3.30	3.00 3.00				A,6A B,7	23 , 30 30, 14	
A 17A	2		SHLD A16/17 E1					.25 .25	NO NO	C		
A 17W			P1-D4 P2-3/I					.18 .22	NO NO		37 15, 12, 13	
A 18	6		P1-H2 P2-7/O					.18 .23	NO NO		37 14, 16	USE WITH P2-7/I
A 19	6		P1-H4 P2-7/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A	CODE IDENT NO. 99974	6900041
SCALE-NONE	REV LTR C	SHEET 12 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 26W			P1-B2 P2-11/O					.18 .23	NO NO		37 16	USE WITH P2-11/I
A 27	3				3.80 3.80	3.50 3.50				A,6A B,7	23 , 30 30, 14	
A 27A	2		SHLD A26/27 E1					.25 .25	NO NO	C		
A 27W			P1-B4 P2-11/I					.18 .22	NO NO		, 37 15, 12, 13	
A 28	3				3.48 3.80	3.18 3.50				B,7	30	
A 28W			P1-S2 P2-15/O					.18 .23	NO NO		37 16	USE WITH P2-15/I
A 29	3				3.80 3.80	3.50 3.50				A,6A B,7	23 , 30 30, 14	
A 29A	2		SHLD A28/29 E7					.25 .25	NO NO	C		
A 29W			P1-S4 P2-15/I					.18 .22	NO NO		, 37 15, 12, 13	
A 30	1				3.80 5.80	3.50 5.50				A,6A B,7	23, 18 18, 14	
A 30A	2		SHLD A30 E7					.25 .25	NO NO			
A 30L			P1-T2 E10					.18 .25	NO NO		37	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 14 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 30R			P1-T4 P2-16/I					.18 .22	NO NO		37 15, 12, 13	USE WITH A86
A 31	6		P1-M6 P2-6/O					.18 .23	NO NO		37 16, 14	USE WITH A84
A 32	3				3.80 3.80	3.50 3.50				A,6A B,7	22, 30 30	
A 32A	2		SHLD A32 E6					.25 .25	NO NO			
A 32W			P1-K6 P3-48/I				.33	.18 .22	NO NO		37 15, 12, 13	USE WITH P2-3/I
A 33	6		P1-K7 P3-48/O					.18 .23	NO NO		37 14, 16	
A 34	6		P1-U2 P2-33/O					.18 .23	NO NO		37 14, 16	USE WITH P2-33/I
A 35	6		P1-U4 P2-33/I					.18 .22	NO NO		37 15, 12, 13	
A 36	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 36A	2		SHLD A36 P1-W4					.25 .18	NO NO		37	
A 36L			P1-V2 P2-34/O				.22	.18 .23	NO NO		37 16	
A 36R			P1-V4 P2-34/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 15 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 20	6		P1-J2 P2-8/O					.18 .23	NO NO		37 14, 16	USE WITH P2-8/I
A 21	6		P1-J4 P2-8/I					.18 .22	NO NO		37 15, 12, 13	
A 22	6		P1-N4 P2-9/O					.18 .23	NO NO		37 14, 16	USE WITH P2-9/I
A 23	3				3.30 3.30	3.00 3.00				A,6A B,7	22, 30 30	
A 23A	2		SHLD A23 E2					.25 .25	NO NO			
A 23W			P1-E4 P2-9/I					.18 .22	NO NO		37 15, 12, 13	
A 24	3				3.48 3.80	3.18 3.50				B,7	30	
A 24W			P1-F2 P2-10/O					.18 .23	NO NO		37 16	USE WITH P2-10/I
A 25	3				3.80 3.80	3.50 3.50				A,6A B,7	23 , 30 30, 14	
A 25A	2		SHLD A24/25 E2					.25 .25	NO NO	C		
A 25W			P1-F4 P2-10/I					.18 .22	NO NO		37 15, 12, 13	
A 26	3				3.48 3.80	3.18 3.50				B,7	30	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 13 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 37A	2		SHLD A37 P1-X5					.25 .18	NO NO		37	
A 37L			P1-W2 P2-35/O				.22	.18 .23	NO NO		37 16	
A 37R			P1-X4 P2-35/I					.18 .22	NO NO		, 37 15, 12, 13	
A 38	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 38A	2		SHLD A38 P1-V5					.25 .18	NO NO		37	
A 38L			P1-W7 P2-36/O				.22	.18 .23	NO NO		37 16	
A 38R			P1-W5 P2-36/I					.18 .22	NO NO		, 37 15, 12, 13	
A 39	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 39A	2		SHLD A39 P1-T5					.25 .18	NO NO		37	
A 39L			P1-U7 P2-37/O				.22	.18 .22	NO NO		37 16	
A 39R			P1-U5 P2-37/I					.18 .22	NO NO		, 37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 16 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43R			P1-R3 P3-6/I					.18 .22	NO NO		, 37 15, 12, 13	
A 44	1				4.80 4.80	4.50 4.50				B,7 B,7	18 18, 14	
A 44L			P1-S1 P2-27/O				 .22	.18 .23	NO NO		37 16	
A 44R			P1-S3 P2-27/I					.18 .22	NO NO		, 37 15, 12, 13	
A 45	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A 45A	2		SHLD A45 E6					.25 .25	NO NO			
A 45L			P1-T1 P3-25/O				 .22	.18 .23	NO NO		37 16	
A 45R			P1-T3 P3-25/I					.18 .22	NO NO		, 37 15, 12, 13	
A 46	4				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A 46A	2		SHLD A46 E6					.25 .25	NO NO			
A 46L			P1-W8 P3-23/O				 .22	.18 .23	NO NO		37 16	
A 46R			P1-W6 P3-23/I					.18 .22	NO NO		, 37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 18 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 46Y			P1-X6 P3-22/O					.18 .23	NO NO		37 16, 14	 USE WITH A85
A 47	1				4.80 4.80	4.50 4.50				B,7 B,7	18, ~~14~~ 18, 14	
A 47L			P1-L2 P2-31/O				 .22	.18 .23	NO NO		37 16	
A 47R			P1-K2 P2-31/I					.18 .22	NO NO		, 37 15, 12, 13	
A 48	1				4.80 4.80	4.50 4.50				A,6B B,7	23, 18 18, 14	
A 48A	2		SHLD A48 P1-C3					.25 .18	NO NO		 37	
A 48L			P1-E2 P3-32/O				 .22	.18 .23	NO NO		37 16	
A 48R			P1-B3 P3-32/I					.18 .22	NO NO		, 37 15, 12, 13	
A 49	1				4.80 4.80	4.50 4.50				A,6B B,7	23, 18 18, 14	
A 49A	2		SHLD A49 P1-E3					.25 .18	NO NO		 37	
A 49L			P1-F1 P3-33/O				 .22	.18 .23	NO NO		37 16	
A 49R			P1-D3 P3-33/I					.18 .22	NO NO		, 37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 19 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 40	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 40A	2		SHLD A40 P1-R5					.25 .18	NO NO		 37	
A 40L			P1-S7 P2-38/O				 .22	.18 .23	NO NO		37 16	
A 40R			P1-S5 P2-38/I					.18 .22	NO NO		, 37 15, 12, 13	
A 41	3				2.98 3.50	2.68 3.00				 B,7	 30	
A 41W			P1-P2 P3-5/O					.18 .23	NO NO		37 16	 USE WITH P3-5/I
A 42	3				3.30 3.30	3.00 3.00				A,6A B,7	23, 18 30, 14	
A 42A	2		SHLD A41/42 E4					.25 .25	NO NO	C		
A 42W			P1-P3 P3-5/I					.18 .22	NO NO		, 37 15, 12, 13	
A 43	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A 43A	2		SHLD A43 E4					.25 .25	NO NO			
A 43L			P1-R1 P3-6/O				 .22	.18 .23	NO NO		37 16	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 17 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 50	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A 50A	2		SHLD A50 P1-G3					.25 .18	NO NO		 37	
A 50L			P1-G1 P3- 34/O				 .22	.18 .23	NO NO		37 16	
A 50R			P1-F3 P3-34/I					.18 .22	NO NO		, 37 15, 12, 13	
A 51	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A 51A	2		SHLD A51 P1-J3					.25 .18	NO NO		 37	
A 51L			P1-H1 P3-35/O				 .22	.18 .23	NO NO		37 16	
A 51R			P1-H3 P3-35/I					.18 .22	NO NO		, 37 15, 12, 13	
A 52	5		P1-U3 E6					.18 .25	NO NO		37	
A 53	5		E6 P3-30					.25 .18	NO NO		 29	
A 54	5		P1-V3 E8					.18 .25	NO NO		37	
A 55	5		E8 P3-21					.25 .18	NO NO		 29	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 20 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	59A	2		SHLD A59 E5					.25 .25	NO NO			
A	59W			P1-P4 P2-14/I					.18 .22	NO NO		37 15, 12, 13	
A	60	6	4.00	E10 P2-14/O					.25 .23	NO NO		14, 16	
A	61	3				3.48 3.80	3.18 3.50				B,7	30	
A	61W			P1-R2 P2-12/O					.18 .23	NO NO		37 16	USE WITH P2-12/I
A	62	3				3.80 3.80	3.50 3.50				A,6A B,7	23 , 30 30, 14	
A	62A	2		SHLD A61/62 E5					.25 .25	NO NO	C		
A	62W			P1-R4 P2-12/I					.18 .22	NO NO		, 37 15, 12, 13	
A	63	6		P1-N7 P2-41/O					.18 .23	NO NO		37 14, 16	
A	64	6		P1-N6 P2-41/I					.18 .22	NO NO		, 37 15, 12, 13	
A	65	7				3.30 3.30	3.00 3.00				A,6B A,6B	30, 22 30, 22, 14	
A	65A	6		SHLD A65 P1-P8					.25 .18	NO NO		37	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 22 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	65B	6		P2-40/O SHLD A65					.23 .25	NO NO		16	
A	65E			P1-P6 P2-40/I					.18 .22	NO NO		37 15, 12, 13	
A	65X			DELETED									
A	66	7				3.30 3.30	3.00 3.00				A,6B A,6B	30, 22 30, 22, 14	
A	66A	6		SHLD A66 P1-R7					.25 .18	NO NO		37	
A	66B	6		P2-39/O SHLD A66					.23 .25	NO NO		16	
A	66E			P1-R6 P2-39/I					.18 .22	NO NO		37 15, 12, 13	
A	66X			DELETED									
A	67	1				5.80 5.80	5.50 5.50				A,6B B,7	23, 18 18, 14	
A	67A	2		SHLD A67 P1-T6					.18	NO		37	
A	67L			P1-S8 P2-43/O				.22	.18 .23	NO NO		37 16	
A	67R			P1-S6 P2-43/I					.22 .22	NO NO		, 37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 23 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	56	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A	56A	2		SHLD A56 P1-F5					.25 .18	NO NO		37	
A	56L			P1-G7 P2-25/O				.22	.18 .23	NO NO		37 16	
A	56R			P1-G5 P2-25/I					.18 .22	NO NO		, 37 15, 12, 13	
A	57	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A	57A	2		SHLD A57 P1-D5					.25 .18	NO NO		37	
A	57L			P1-E7 P2-26/O				.22	.18 .23	NO NO		37 16	
A	57R			P1-E5 P2-26/I					.18 .22	NO NO		, 37 15, 12, 13	
A	58	1				5.30 5.30	5.00 5.00				B,7 B,7	18 18, 14	
A	58L			P1-G2 P2-4/O				.22	.18 .23	NO NO		37 16	
A	58R			P1-G4 P2-4/I					.18 .22	NO NO		, 37 15, 12, 13	
A	59	3				5.30 5.30	5.00 5.00				A,6A B,7	22, 30 30	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 21 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	68	1				5.80 5.80	5.50 5.50				B,7 B,7	18 18, 14	
A	68L			P1-U8 P2-45/O				.22	.18 .23	NO NO		37 16	
A	68R			P1-U6 P2-45/I					.22 .22	NO NO		, 37 15, 12, 13	
A	69	1				5.80 5.80	5.50 5.50				B,7 B,7	18 18, 14	
A	69L			P1-V7 P2-46/O				.22	.18 .23	NO NO		37 16	
A	69R			P1-V6 P2-46/I					.18 .22	NO NO		, 37 15, 12, 13	
A	70	5		E5 E6					.25 .25	NO NO			
A	71	5		E5 P2-13					.25 .16	NO NO		29	
A	72	5		E1 E2					.25 .25	NO NO			
A	73	5		E2 E8					.25 .25	NO NO			
A	74	5		E2 E9					.25 .25	NO NO			
A	75	5		E3 E4					.25 .25	NO NO			

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR C
SHEET 24 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 83L			P1-B1 P3-27/O					.18 .23	NO NO		37 16	
A 83R			P1-C2 P3-27/I					.18 .22	NO NO		37 15, 12, 13	
A 84	6	8.00	P2-6/I FREE END					.22	NO		15, 12, 13	USE WITH A31 SEE NOTE 14
A 85	6	8.00	P3-22/I FREE END					.22	NO		15, 12, 13	USE WITH A46Y SEE NOTE 14
A 86	6	4.00	E10 P2-16/O					.25 .23	NO NO		16	USE WITH A30R
A 87	5		E11-B8 E12					.38 .20	NO NO			
A 88	5		E13-B8 E14					.38 .20	NO NO			
A 89	5		E15-B8 E16					.38 .20	NO NO			
A 90	5		E17-B8 E18					.38 .20	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 26 OF ~~25~~ 27

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 76	5		E3 E8					.25 .25	NO NO			
A 77	5		E4 E9					.25 .25	NO NO			
A 78	5		E7 E9					.25 .25	NO NO			
A 79	5		E9 P2-44					.25 .16	NO NO		29	
A 80	1				5.30 5.30	5.00 5.00				A,6A B,7	23, 18 18, 14	
A 80A	2		SHLD A80 E8					.25 .25	NO NO			
A 80L			P1-W1 P3-31/O				.22	.18 .23	NO NO		37 16	
A 80R			P1-W3 P3-31/I					.18 .22	NO NO		, 37 15, 12, 13	
A 81			DELETED									
A 82			DELETED									
A 83	1				5.30 5.30	5.00 5.00				A,6A B,7	23, 18 18, 14	
A 83A	2		SHLD A83 E5					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR C	SHEET 25 OF ~~25~~ 27

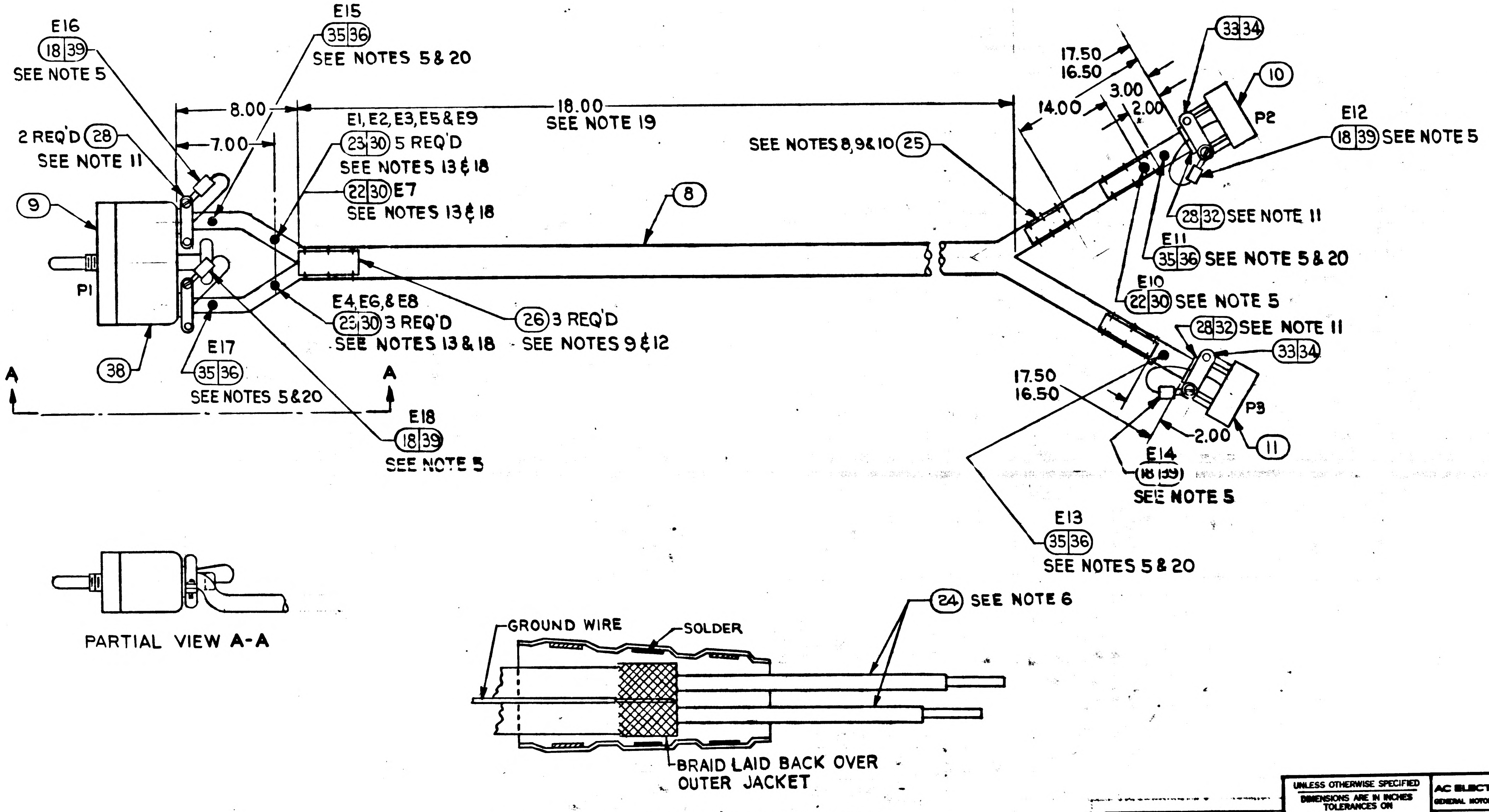
MIL 2084 9-65

TABLE I

PLUG NO.	MARKING
P1	W142-P1(W157-P2)(J3-SCM)
P2	W142-P2 (J1-TPA2)
P3	W142-P3(J2-TPA2)

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	C	REPLACES REV. B PER TDRR 26105		Jan 66	



E16
18 39
SEE NOTE 5
E15
35 36
SEE NOTES 5 & 20
8.00
7.00
18.00
SEE NOTE 19
2 REQ'D 28
SEE NOTE 11
E1, E2, E3, E5 & E9
23 30 5 REQ'D
SEE NOTES 13 & 18
22 30 E7
SEE NOTES 13 & 18
9
P1
38
E4, E6, & E8
23 30 3 REQ'D
SEE NOTES 13 & 18
26 3 REQ'D
SEE NOTES 9 & 12
E17
35 36
SEE NOTES 5 & 20
A
A
E18
18 39
SEE NOTE 5
8
SEE NOTES 8, 9 & 10 25
17.50
16.50
14.00
3.00
2.00
33 34
10
P2
E12
18 39 SEE NOTE 5
28 32 SEE NOTE 11
E11
35 36 SEE NOTE 5 & 20
E10
22 30 SEE NOTE 5
28 32 SEE NOTE 11
33 34
17.50
16.50
P3
2.00
11
E14
18 39
SEE NOTE 5
E13
35 36
SEE NOTES 5 & 20
GROUND WIRE
SOLDER
24 SEE NOTE 6
BRAID LAID BACK OVER OUTER JACKET

PARTIAL VIEW A-A

SHIELD TERMINATION WITH SOLDER SLEEVE

FIGURE 1

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .50
3 PLACE DECIMALS ± -
ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Janowiak 30 AUG 65
CHECKED MOLYE 10 SEP 65
APPROVED E SWANSON 30 SEP 65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W142

SIZE D
CODE IDENT NO. 99974
6900041
SCALE NONE
SHEET OF 27

APPLICATION	
NEXT ASSY	USED ON
6900043-011	1900030

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES REV B WITH CHANGE PER TDRR 26105	6 JAN 66	JJ / JAC
D	REVISED PER TDRR 27010	16 MAR 66	LK / JAC

REV	D	D	D	D	D	D	D	D	D	D									
SHEET	20	21	22	23	24	25	26	27	28	29									
REV STATUS REV	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
OF SHEETS SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Janowiak	DATE	30 AUG 65
CHECKED MOLYE		31 AUG 65
APPROVAL C.W. WISE		31 AUG 65
APPROVAL		2-9-66
NASA APPROVAL		
MIT APPROVAL		
CONTRACT NAS 9-497		

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W142

CODE IDENT NO.	SIZE		REV
99974	A	6900041	D
SCALE –		SHEET 1 OF 29	

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER - A - ND1002071 B - ND1002032 C - SEE CONFIGURATION SHEET FIG. 1
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	ASSEMBLE PER ND1002032.
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.
6	APPLY LEAD IDENTIFICATION TO SLEEVES PER ND1002019.
7	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
8	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
9	SECURE TO CABLE USING ITEM 27. MARKING TO READ AWAY FROM CONNECTOR
10	SERIALIZE PER ND1002023
11	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 28 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP.
12	MARK IDENTIFICATION BANDS AS NOTED IN TABLE I, .12 INCH HIGH PER ND1002019. CENTRALIZE.
13	LOCATE IDENTIFICATION SLEEVES ADJACENT TO SOLDER SLEEVES
14	APPLY GLYPTAL TO LEAD ENDS

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR D	SHEET 2 OF 29

NOTE NUMBER	GENERAL NOTES DESCRIPTION
15	IN CIRCUIT POINT FIELD --- I - INNER CONTACT O - OUTER CONTACT
16	TYPICAL INSTALLATION OF CONTACTS A - ASSEMBLE OUTER HYRING OVER BOTH LEADS B - ASSEMBLE OUTER SLEEVE, INNER SLEEVE, AND INNER CONTACT TO INNER LEAD IN ORDER LISTED. CRIMP CONTACT. C - ASSEMBLE OUTER CONTACT TO INNER CONTACT. SLIDE OUTER SLEEVE OVER OUTER CONTACT UNTIL SEATED. LAY OUTER LEAD AGAINST OUTER CONTACT IN OPEN SECTION OF OUTER SLEEVE. D - SLIDE HYRING FORWARD AGAINST SPRING AND CRIMP.
17	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD B - TO END SHIELD E - GRAY L - WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER W - WHITE X - LEAD SHIELD Y - WHITE WITH YELLOW TRACER
18	E1 THRU E9 STAGGER TO REDUCE BULK.
19	SPOT TIE AT 4.00 INCH INTERVALS WITHIN DESIGNATED DIMENSION.
20	SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE E11-B,E13-B, AND E17-B RESPECTIVELY.
21	ZIPPER TUBING SHALL HAVE Z TYPE TRACK AND ALUMINUM FOIL SHALL BE .003 + - .001 THICK.

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR D	SHEET 3 OF 29

NOTE NUMBER — GENERAL NOTES — DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR D	SHEET 4 OF 29

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900041-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED, 132 FT. TOTAL LENGTH.
	2	1	6900041-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT., 160 FT. TOTAL LENGTH.
	3	1	6900041-003	WIRE, ND1002181, TYPE 1, CLASS 4, WHT. JKT., 24AWG, WHT., 68 FT. TOTAL LENGTH.
	4	1	6900041-004	WIRE, ND1002181, TYPE 3, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED, WHT/YEL, 4 FT TOT LGTH
	5	1	6900041-005	WIRE, ND1002181, TYPE 1, CLASS 1, 20AWG, WHT., 44 FT. TOTAL LENGTH.
	6	1	6900041-006	WIRE, ND1002181, TYPE 1, CLASS 1, 24AWG, WHT., 61 FT TOTAL LENGTH.
	7	1	6900041-007	WIRE, COAXIAL, MIL-D-17/69A RG 188AU, 8 FT TOTAL LENGTH.
	8	1	6900041-008	ZIPPER TUBING PER ND1002155, TYPE III, 1.250 INCH DIA., 9.00 FT. TOTAL LENGTH
7	9	1	1897336-001	CONNECTOR, PLUG ELEC.
7	10	1	1897215-011	CONNECTOR, PLUG ELEC.
7	11	1	1897215-012	CONNECTOR, PLUG ELEC.
7	12	53	1016369-711	INNER SUPPORTING SLEEVE
7	13	53	1016369-188	CONTACT, INNER MALE
7	14	53	1016369-588	HYRING

SIZE	CODE IDENT NO.	
A.	99974	6900041
SCALE-NONE	REV LTR D	SHEET 5 OF 29

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
7	15	53	1016369-713	OUTER SUPPORTING SLEEVING
7	16	53	1016369-488	CONTACT, OUTER FEMALE
	17	AR	1010655- 1	GLYPTAL, BLUE
7	18	75	1010490-228	INSULATION SLEEVING, ELEC.
	19		1016369-712	DELETED
	20		1016369-388	DELETED
	21		1016369-288	DELETED
7	22	11	1010763- 1	SOLDER SLEEVE
7	23	45	1010763- 2	SOLDER SLEEVE
7	24	7	1010490-138	INSULATION SLEEVING, ELEC.
7	25	1	1016128-011	BAND, IDENTIFICATION
7	26	3	1016128-041	BAND, IDENTIFICATION
	27	AR	MIL-T-713-B	LACING TAPE, TYPE P, CLASS 2, BLACK (152732)
	28	AR	MIL-I-631, TYPE F FORM I, BLACK GRADE A, CLASS 1	FILLER TAPE, .62 WIDE X .020 THICK
7	29	4	1016369-421	CONTACT, FEMALE
7	30	54	1010490-232	INSULATION SLEEVING, ELEC
7	31	27	1016369-420	CONTACT, MALE

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR D	SHEET 6 OF 29

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
7	32	2	1016282- 24	GROMMET
7	33	2	1897330-001	CLAMP, CABLE
7	34	2	1897331-001	ADAPTER, CABLE CLAMP
7	35	4	1016606-002	SPLICE REDUCER
7	36	4	1010490-258	INSULATION SLEEVING, ELEC.
7	37	125	1016369-424	CONTACT, MALE
7	38	1	1897391	CLAMP, STRAIN RELIEF
7	39	4	1015902- 49	LUG, TERMINAL

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR D	SHEET 7 OF 29

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1				2.30 2.30	2.00 2.00			A,68 B,7	23, 16 18, 14	
A	1A	2	SHLD A1 P1-B5					.25 .18	NO NO		37	
A	1L		P1-C7 P2-17/0				.22	.18 .23	NO NO		37 16	SEE NOTE 16 TYP
A	1R		P1-C5 P2-17/1					.18 .22	NO NO		37 15, 12, 13	
A	2	1				2.30 2.30	2.00 2.00			A,68 B,7	23, 18 18, 14	
A	2A	2	SHLD A2 P1-A6					.25 .18	NO NO		37	
A	2L		P1-B7 P2-18/0				.22	.18 .23	NO NO		37 16	
A	2R		P1-A5 P2-18/1					.18 .22	NO NO		37 15, 12, 13	
A	3	1				2.30 2.30	2.00 2.00			A,68 B,7	23, 18 18, 14	
A	3A	2	SHLD A3 P1-C6					.25 .18	NO NO		37	
A	3L		P1-B8 P2-19/0				.22	.18 .23	NO NO		37 16	
A	3R		P1-B6 P2-19/1					.18 .22	NO NO		37 15, 12, 13	

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR D	SHEET 8 OF 29

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	4	1				2.30 2.30	2.00 2.00			A,68 B,7	23, 18 18, 14	
A	4A	2	SHLD A4 P1-E6					.25 .18	NO NO		37	
A	4L		P1-D7 P2-20/0				.22	.18 .23	NO NO		37 16	
A	4R		P1-E6 P2-20/1					.18 .22	NO NO		37 15, 12, 13	
A	5	1				2.30 2.30	2.00 2.00			A,68 B,7	23, 18 18, 14	
A	5A	2	SHLD A5 P1-G6					.25 .18	NO NO		37	
A	5L		P1-F7 P2-21/0				.22	.18 .23	NO NO		37 16	
A	5R		P1-F6 P2-21/1					.18 .22	NO NO		37 15, 12, 13	
A	6	1				2.30 2.30	2.00 2.00			A,68 B,7	23, 18 18, 14	
A	6A	2	SHLD A6 P1-J6					.25 .18	NO NO		37	
A	6L		P1-H7 P2-22/0				.22	.18 .23	NO NO		37 16	
A	6R		P1-H6 P2-22/1					.18 .22	NO NO		37 15, 12, 13	

SIZE	CODE IDENT NO.	
A	99974	6900041
SCALE-NONE	REV LTR D	SHEET 9 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	7	1			2.80 2.80	2.50 2.50				A,6B B,7	23, 18 18, 14	
A	7A	2	SHLD A7 P1-N5					.25 .18	NO NO		 37	
A	7L		P1-P7 P2-23/0				 .22	.18 .23	NO NO		37 16	
A	7R		P1-P5 P2-23/I					.18 .22	NO NO		37 15, 12, 13	
A	8	1			2.80 2.80	2.50 2.50				A,6B B,7	23, 18 18, 14	
A	8A	2	SHLD A8 P1-H5					.25 .18	NO NO		 37	
A	8L		P1-J7 P2-24/0				 .22	.18 .23	NO NO		37 16	
A	8R		P1-J5 P2-24/I					.18 .22	NO NO		37 15, 12, 13	
A	9	1			2.80 2.80	2.50 2.50				A,6A B,7	23, 18 18, 14	
A	9A	2	SHLD A9 E3					.25 .25	NO NO			
A	9L		P1-K1 P2-28/0				 .22	.18 .23	NO NO		37 16	
A	9R		P1-K3 P2-28/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR D
SHEET 10 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	10	1			2.80 2.80	2.50 2.50				A,6A B,7	23, 18 18, 14	
A	10A	2	SHLD A10 E3					.25 .25	NO NO			
A	10L		P1-M2 P2-29/0				 .22	.18 .23	NO NO		37 16	
A	10R		P1-M3 P2-29/I					.18 .22	NO NO		37 15, 12, 13	
A	11	1			2.80 2.80	2.50 2.50				A,6A B,7	23, 18 18, 14	
A	11A	2	SHLD A11 E3					.25 .25	NO NO			
A	11L		P1-N2 P2-30/0				 .22	.18 .23	NO NO		37 16	
A	11R		P1-N3 P2-30/I					.18 .22	NO NO		37 15, 12, 13	
A	12	3			4.30 3.30	4.00 3.00				A,6A B,7	 30	
A	12A	2	E19 E1					.25 .25	NO NO			
A	12W		P1-A3 P2-1/0				 .21	.18 .23	NO NO		37 16	 USE WITH P2-1/I
A	12X		E19 SHLD A12									

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR D
SHEET 11 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	13	3			4.30 3.30	4.00 3.00				A,6A B,7	14 30	
A	13A		DELETED									
A	13W		P1-A4 P2-1/I					.18 .22	NO NO		37 15, 12, 13	
A	13X		E19 SHLD A13							C		
A	14	6	P1-C1 P2-2/0					.18 .23	NO NO		37 14, 16	 USE WITH P2-2/I
A	15	3			3.30 3.30	3.00 3.00				A,6A B,7	22, 30 30	
A	15A	2	SHLD A15 E1					.25 .25	NO NO			
A	15W		P1-C4 P2-2/I					.18 .22	NO NO		37 15, 12, 13	
A	16	3			4.30 3.30	4.00 3.00				A,6A B,7	 30	
A	16A	2	E20 E1					.25 .25	NO NO			
A	16W		P1-D2 P2-3/0				 .21	.18 .23	NO NO		37 16	 USE WITH P2-3/I
A	16X		E20 SHLD A13									

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR D
SHEET 12 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	17	3			4.30 3.30	4.00 3.00				A,6A B,7	14 30	
A	17A		DELETED									
A	17W		P1-D4 P2-3/I					.18 .22	NO NO		37 15, 12, 13	
A	17X		E20 SHLD A17							C		
A	18	6	P1-H2 P2-7/0					.18 .23	NO NO		37 14, 16	 USE WITH P2-7/I
A	19	6	P1-H4 P2-7/I					.18 .22	NO NO		37 15, 12, 13	
A	20	6	P1-J2 P2-8/0					.18 .23	NO NO		37 14, 16	 USE WITH P2-8/I
A	21	6	P1-J4 P2-8/I					.18 .22	NO NO		37 15, 12, 13	
A	22	6	P1-N4 P2-9/0					.18 .23	NO NO		37 14, 16	 USE WITH P2-9/I
A	23	3			3.30 3.30	3.00 3.00				A,6A B,7	22, 30 30	
A	23A	2	SHLD A23 E2					.25 .25	NO NO			
A	23W		P1-E4 P2-9/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR D
SHEET 13 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 24	3				4.30 3.30	4.00 3.00				A,6A B,7	 30	
A 24A	2		E21 E2					.25 .25	NO 			
A 24W			P1-F2 P2-10/O				 .21	.18 .23			37 16	
A 24X			E21 SHLD A24									
A 25	3				4.30 3.80	4.00 3.50				A,6A B,7	14 30	
A 25A			DELETED									
A 25W			P1-F4 P2-10/I					.18 .22	NO NO		37 15, 12, 13	
A 25X			E21 SHLD A25							C		
A 26	3				4.30 3.80	4.00 3.50				A,6A B,7	 30	
A 26A	2		E22 E1					.25 .25	NO 			
A 26W			P1-B2 P2-11/O				 .21	.18 .23			37 16	USE WITH P2-11/I
A 26X			E22 SHLD A26									

SIZE	CODE IDENT NO.		
A	99974	6900041	
SCALE-NONE	REV LTR	D	SHEET 14 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	3				4.30 3.80	4.00 3.50				A,6A B,7	14 30	
A 27A			DELETED									
A 27W			P1-B4 P2-11/I					.18 .22	NO NO		37 15, 12, 13	
A 27X			E22 SHLD A27							C		
A 28	3				4.30 3.80	4.00 3.50				A,6A B,7	 30	
A 28A	2		E23 E7					.25 .25	NO 			
A 28W			P1-S2 P2-15/O				 .21	.18 .23			37 16	USE WITH P2-15/I
A 28X			E23 SHLD A28									
A 29	3				4.30 3.80	4.00 3.50				A,6A B,7	14 30	
A 29A			DELETED									
A 29W			P1-S4 P2-15/I					.18 .22	NO NO		37 15, 12, 13	
A 29X			E23 SHLD A29							C		

SIZE	CODE IDENT NO.		
A	99974	6900041	
SCALE-NONE	REV LTR	D	SHEET 15 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 30	1				3.60 5.80	3.50 5.50				A,6A B,7	23, 18 18, 14	
A 30A	2		SHLD A30 E7					.25 .25	NO NO			
A 30L			P1-T2 E10					.18 .25	NO NO		37	
A 30R			P1-T4 P2-16/I					.18 .22	NO NO		37 15, 12, 13	USE WITH A86
A 31	6		P1-M6 P2-6/O					.18 .23	NO NO		37 16, 14	USE WITH A84
A 32	3				3.80 3.80	3.50 3.50				A,6A B,7	22, 30 30	
A 32A	2		SHLD A32 E6					.25 .25	NO NO			
A 32W			P1-K6 P3-48/I				 .33	.18 .22	NO NO		37 15, 12, 13	USE WITH P2-3/I
A 33	6		P1-K7 P3-48/O					.18 .23	NO NO		37 14, 16	
A 34	6		P1-U2 P2-33/O					.18 .23	NO NO		37 14, 16	USE WITH P2-33/I
A 35	6		P1-U4 P2-33/I					.18 .22	NO NO		37 15, 12, 13	
A 36	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	

SIZE	CODE IDENT NO.		
A	99974	6900041	
SCALE-NONE	REV LTR	D	SHEET 16 OF 29

CABLE ASSEMBLY W142 6900041 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 36A	2		SHLD A36 P1-W4					.25 .18	NO NO		 37	
A 36L			P1-V2 P2-34/O				 .22	.18 .23	NO NO		37 16	
A 36R			P1-V4 P2-34/I					.18 .22	NO NO		37 15, 12, 13	
A 37	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 37A	2		SHLD A37 P1-X5					.25 .18	NO NO		 37	
A 37L			P1-W2 P2-35/O				 .22	.18 .23	NO NO		37 16	
A 37R			P1-X4 P2-35/I					.18 .22	NO NO		, 37 15, 12, 13	
A 38	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 38A	2		SHLD A38 P1-V5					.25 .18	NO NO		 37	
A 38L			P1-W7 P2-36/O				 .22	.18 .23	NO NO		37 16	
A 38R			P1-W5 P2-36/I					.18 .22	NO NO		, 37 15, 12, 13	
A 39	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	

SIZE	CODE IDENT NO.		
A	99974	6900041	
SCALE-NONE	REV LTR	D	SHEET 17 OF 29

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	39A	2		SHLD A39 P1-T5					.25 .18	NO NO		37	
A	39L			P1-U7 P2-37/O				.22	.18 .22	NO NO		37 16	
A	39R			P1-U5 P2-37/I					.18 .22	NO NO		, 37 15, 12, 13	
A	40	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A	40A	2		SHLD A40 P1-R5					.25 .18	NO NO		37	
A	40L			P1-S7 P2-38/O				.22	.18 .23	NO NO		37 16	
A	40R			P1-S5 P2-38/I					.18 .22	NO NO		, 37 15, 12, 13	
A	41	3				4.30 3.80	4.00 3.50				A,6A B,7	30	
A	41A	2		E24 E4					.25 .25	NO NO			
A	41W			P1-P2 P3-5/O				.21	.18 .23	NO NO		37 16	USE WITH P1-5/I
A	41X			E24 SHLD A41									
A	42	3				4.30 3.50	4.00 3.50				A,6A B,7	14 30	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	42A			DELETED									
A	42W			P1-P3 P3-5/I					.18 .22	NO NO		37 15, 12, 13	
A	42X			E24 SHLD A42							C		
A	43	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A	43A	2		SHLD A43 E4					.25 .25	NO NO			
A	43L			P1-R1 P3-6/O				.22	.18 .23	NO NO		37 16	
A	43R			P1-R3 P3-6/I					.18 .22	NO NO		, 37 15, 12, 13	
A	44	1				4.80 4.80	4.50 4.50				B,7 B,7	18 18, 14	
A	44L			P1-S1 P2-27/O				.22	.18 .23	NO NO		37 16	
A	44R			P1-S3 P2-27/I					.18 .22	NO NO		, 37 15, 12, 13	
A	45	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A	45A	2		SHLD A45 E6					.25 .25	NO NO			

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	45L			P1-T1 P3-25/O				.22	.18 .23	NO NO		37 16	
A	45R			P1-T3 P3-25/I					.18 .22	NO NO		, 37 15, 12, 13	
A	46	4				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A	46A	2		SHLD A46 E6					.25 .25	NO NO			
A	46L			P1-W8 P3-23/O				.22	.18 .23	NO NO		37 16	
A	46R			P1-W6 P3-23/I					.18 .22	NO NO		, 37 15, 12, 13	
A	46Y			P1-X6 P3-22/O					.18 .23	NO NO		37 16, 14	USE WITH A85
A	47	1				4.80 4.80	4.50 4.50				B,7 B,7	18 18, 14	
A	47L			P1-L2 P2-31/O				.22	.18 .23	NO NO		37 16	
A	47R			P1-K2 P2-31/I					.18 .22	NO NO		, 37 15, 12, 13	
A	48	1				4.80 4.80	4.50 4.50				A,6B B,7	23, 18 18, 14	
A	48A	2		SHLD A48 P1-C3					.25 .18	NO NO		37	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	48L			P1-E2 P3-32/O				.22	.18 .23	NO NO		37 16	
A	48R			P1-B3 P3-32/I					.18 .22	NO NO		, 37 15, 12, 13	
A	49	1				4.80 4.80	4.50 4.50				A,6B B,7	23, 18 18, 14	
A	49A	2		SHLD A49 P1-E3					.25 .18	NO NO		37	
A	49L			P1-F1 P3-33/O				.22	.18 .23	NO NO		37 16	
A	49R			P1-D3 P3-33/I					.18 .22	NO NO		, 37 15, 12, 13	
A	50	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A	50A	2		SHLD A50 P1-G3					.25 .18	NO NO		37	
A	50L			P1-G1 P3-34/O				.22	.18 .23	NO NO		37 16	
A	50R			P1-F3 P3-34/I					.18 .22	NO NO		, 37 15, 12, 13	
A	51	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A	51A	2		SHLD A51 P1-J3					.25 .18	NO NO		37	

CABLE ASSEMBLY W142 6900041 D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	51L			P1-H1 P3-35/0				.22	.18 .23	NO NO		37 16	
A	51R			P1-H3 P3-35/I					.18 .22	NO NO		, 37 15, 12, 13	
A	52	5		P1-U3 E6					.18 .25	NO NO		37	
A	53	5		E6 P3-30					.25 .18	NO NO		29	
A	54	5		P1-V3 E8					.18 .25	NO NO		37	
A	55	5		E8 P3-21					.25 .18	NO NO		29	
A	56	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A	56A	2		SHLD A56 P1-F5					.25 .18	NO NO		37	
A	56L			P1-G7 P2-25/0				.22	.18 .23	NO NO		37 16	
A	56R			P1-G5 P2-25/I					.18 .22	NO NO		, 37 15, 12, 13	
A	57	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A	57A	2		SHLD A57 P1-D5					.25 .18	NO NO		37	

SIZE A | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR D | SHEET 22 OF 29

CABLE ASSEMBLY W142 6900041 D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	57L			P1-E7 P2-26/0				.22	.18 .23	NO NO		37 16	
A	57R			P1-E5 P2-26/I					.18 .22	NO NO		, 37 15, 12, 13	
A	58	1				5.30 5.30	5.00 5.00				B,7 B,7	18 18, 14	
A	58L			P1-G2 P2-4/0				.22	.18 .23	NO NO		37 16	
A	58R			P1-G4 P2-4/I					.18 .22	NO NO		, 37 15, 12, 13	
A	59	3				5.30 5.30	5.00 5.00				A,6A B,7	22, 30 30	
A	59A	2		SHLD A59 E5					.25 .25	NO NO			
A	59W			P1-P4 P2-14/I					.18 .22	NO NO		37 15, 12, 13	
A	60	6	4.00	E10 P2-14/0					.25 .23	NO NO		14, 16	
A	61	3				4.30 3.80	4.00 3.50				A,6A B,7	30	
A	61A	2		E25 E5					.25 .25	NO NO			
A	61W			P1-R2 P2-12/0				.21	.18 .23	NO NO		37 16	USE WITH P2-12/I

SIZE A | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR D | SHEET 23 OF 29

CABLE ASSEMBLY W142 6900041 D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	61X			E25 SHLD A61									
A	62	3				4.30 3.80	4.00 3.50				A,6A B,7	14 30	
A	62A			DELETED									
A	62W			P1-R4 P2-12/I					.18 .22	NO NO		37 15, 12, 13	
A	62X			E25 SHLD A61							C		
A	63	6		P1-N7 P2-41/0					.18 .23	NO NO		37 14, 16	
A	64	6		P1-N6 P2-41/I					.18 .22	NO NO		, 37 15, 12, 13	
A	65	7				3.30 .44	3.00 .18				A,6B B,9	30, 23 30 , 14	
A	65A	6		A65X P1-P8					.25 .18	NO NO		37	
A	65B			DELETED									
A	65E			P1-P6 P2-40/I					.18 .18	NO NO		37 , 13	
A	65X			A65A P2-40/0					.25	NO NO		16	

SIZE A | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR D | SHEET 24 OF 29

CABLE ASSEMBLY W142 6900041 D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	66	7				3.30 .44	3.00 .18				A,6B A,9	30, 23 30 , 14	
A	66A	6		A66X P1-R7					.25 .18	NO NO		37	
A	66B			DELETED									
A	66E			P1-R6 P2-39/I					.18 .18	NO NO		37 , 13	
A	66X			A66A P2-39/0					.25	NO NO		16	
A	67	1				5.80 5.80	5.50 5.50				A,6B B,7	23, 18 18, 14	
A	67A	2		SHLD A67 P1-T6					.18	NO		37	
A	67L			P1-S8 P2-43/0				.22	.18 .23	NO NO		37 16	
A	67R			P1-S6 P2-43/I					.22 .22	NO NO		, 37 15, 12, 13	
A	68	1				5.80 5.80	5.50 5.50				B,7 B,7	18 18, 14	
A	68L			P1-U8 P2-45/0				.22	.18 .23	NO NO		37 16	
A	68R			P1-U6 P2-45/I					.22 .22	NO NO		, 37 15, 12, 13	

SIZE A. | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR D | SHEET 25 OF 29

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 69	1				5.80	5.50				B,7	18	
					5.80	5.50				6,7	18, 14	
A 69L			P1-V7					.18	NO		37	
			P2-46/0				.22	.23	NO		16	
A 69R			P1-V6					.18	NO		, 37	
			P2-46/1					.22	NO		15, 12, 13	
A 70	5		E5					.25	NO			
			E6					.25	NO			
A 71	5		E5					.25	NO			
			P2-13					.16	NO		29	
A 72	5		E1					.25	NO			
			E2					.25	NO			
A 73	5		E2					.25	NO			
			E8					.25	NO			
A 74	5		E2					.25	NO			
			E9					.25	NO			
A 75	5		E3					.25	NO			
			E4					.25	NO			
A 76	5		E3					.25	NO			
			E8					.25	NO			
A 77	5		E4					.25	NO			
			E9					.25	NO			
A 78	5		E7					.25	NO			
			E9					.25	NO			

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR D
SHEET 26 OF 29

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	5		E9					.25	NO			
			P2-44					.16	NO		29	
A 80	1				5.30	5.00				A,6A	23, 18	
					5.30	5.00				B,7	18, 14	
A 80A	2		SHLD A80					.25	NO			
			E8					.25	NO			
A 80L			P1-W1					.18	NO		37	
			P3-31/0				.22	.23	NO		16	
A 80R			P1-W3					.18	NO		, 37	
			P3-31/1					.22	NO		15, 12, 13	
A 81			DELETED									
A 82			DELETED									
A 83	1				5.30	5.00				A,6A	23, 18	
					5.30	5.00				B,7	18, 14	
A 83A	2		SHLD A83					.25	NO			
			E5					.25	NO			
A 83L			P1-B1					.18	NO		37	
			P3-27/0					.23	NO		16	
A 83R			P1-C2					.18	NO		37	
			P3-27/1					.22	NO		15, 12, 13	
A 84	6	8.00	P2-6/I					.22	NO		15, 12, 13	USE WITH A31
			FREE END									SEE NOTE 14

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR D
SHEET 27 OF 29

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 85	6	6.00	P3-22/I					.22	NO		15, 12, 13	USE WITH A46Y
			FREE END									SEE NOTE 14
A 86	6	4.00	E10					.25	NO			
			P2-16/0					.23	NO		16	USE WITH A30R
A 87	5		E11-8B					.38	NO			
			E12					.20	NO			
A 88	5		E13-8B					.38	NO			
			E14					.20	NO			
A 89	5		E15-8B					.38	NO			
			E16					.20	NO			
A 90	5		E17-8B					.38	NO			
			E18					.20	NO			

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR D
SHEET 28 OF 29

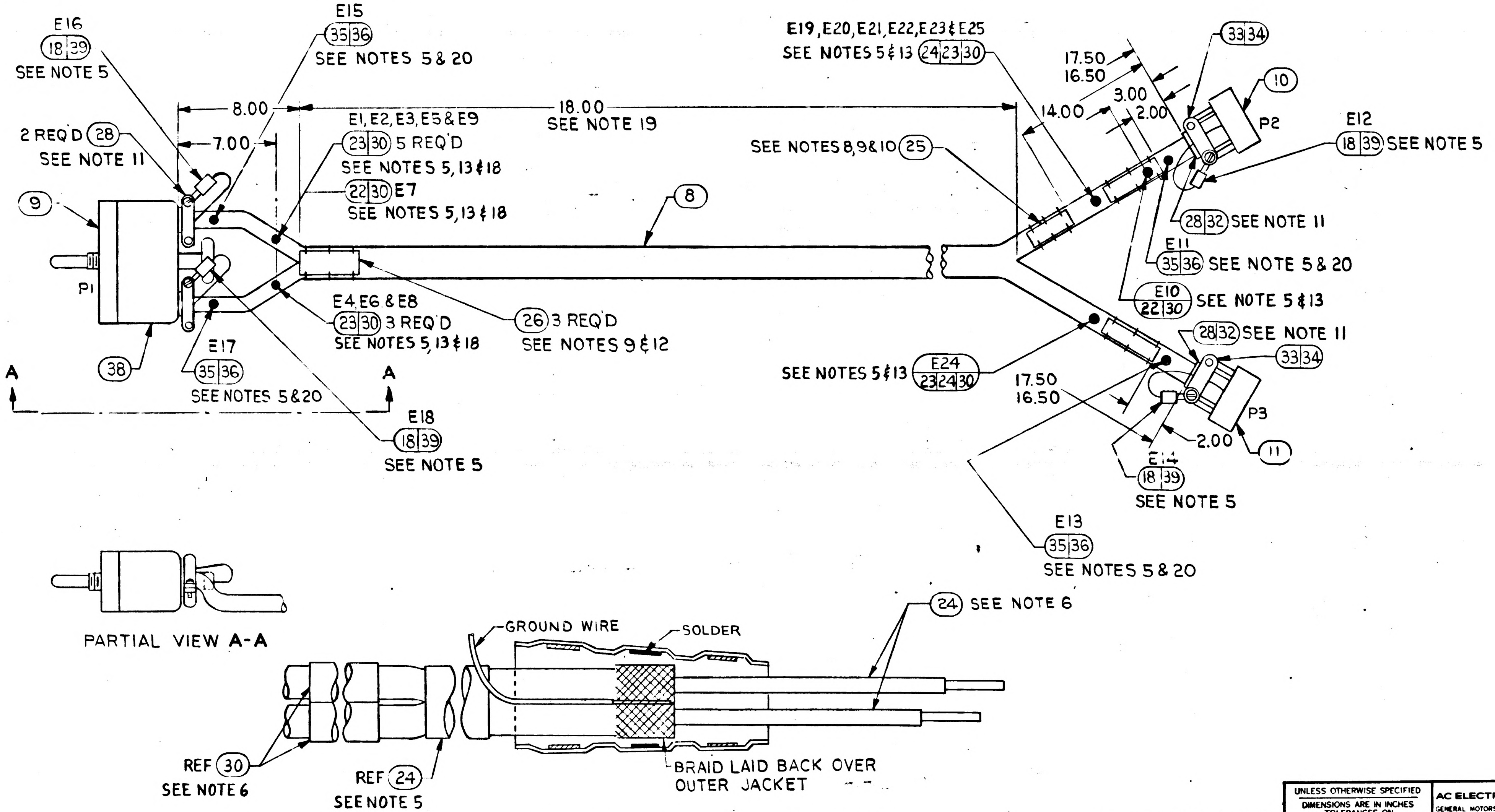
6900041 D

TABLE I

PLUG NO.	MARKING
P1	W142-P1(W157-P2)(J3-SCM)
P2	W142-P2(J1-TPA2)
P3	W142-P3(J2-TPA2)

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	C	REPLACES REV. B PER TDRR 20105		6 JAN 66	
		SEE SHEET 1 FOR REVISION RECORD			



E16
18 39
SEE NOTE 5
E15
35 36
SEE NOTES 5 & 20
8.00
18.00
SEE NOTE 19
7.00
2 REQ'D 28
SEE NOTE 11
E1, E2, E3, E5 & E9
23 30 5 REQ'D
SEE NOTES 5, 13 & 18
22 30 E7
SEE NOTES 5, 13 & 18
9
P1
8
E4, E6 & E8
23 30 3 REQ'D
SEE NOTES 5, 13 & 18
26 3 REQ'D
SEE NOTES 9 & 12
38
E17
35 36
SEE NOTES 5&20
A
A
E18
18 39
SEE NOTE 5
E19, E20, E21, E22, E23 & E25
SEE NOTES 5 & 13 24 23 30
SEE NOTES 8, 9 & 10 25
17.50
16.50
14.00
3.00
2.00
33 34
10
P2
E12
18 39 SEE NOTE 5
28 32 SEE NOTE 11
E11
35 36 SEE NOTE 5 & 20
E10
22 30 SEE NOTE 5 & 13
28 32 SEE NOTE 11
33 34
SEE NOTES 5 & 13
E24
23 24 30
17.50
16.50
P3
2.00
11
E14
18 39
SEE NOTE 5
E13
35 36
SEE NOTES 5 & 20
PARTIAL VIEW A-A
24 SEE NOTE 6
GROUND WIRE
SOLDER
REF 30
SEE NOTE 6
REF 24
SEE NOTE 5
BRAID LAID BACK OVER OUTER JACKET
SHIELD TERMINATION WITH SOLDER SLEEVE

FIGURE 1

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .50
3 PLACE DECIMALS ± -
ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN Jonovnak DATE 30 AUG 65
CHECKED MOLYE 10 SEP 65
APPROVAL E. SWANSON 30 SEP 65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W142

SIZE D
CODE IDENT NO. 99974
6900041
SCALE NONE
SHEET 29 OF 29

6900041

APPLICATION	
NEXT ASSY	USED ON
6900043-011	1900030

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES REV B WITH CHANGE PER TDRR 26105	6 JAN 66	JJJ JAC
D	REVISED PER TDRR 27010	16 MAR 66	LK JAC
E	REVISED PER TDRR 27265	28 MAR 66	[illegible]

REV	E	E	E	E	E	E	E	E	E	E
SHEET	20	21	22	23	24	25	26	27	28	29

REV STATUS OF SHEETS																				
REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Janowiak DATE 30 AUG 65
CHECKED MOLYE 31 AUG 65
APPROVAL C.W. WISE 31 AUG 65
APPROVAL 2-7-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
CONTRACT NAS 9-497

CABLE ASSEMBLY, SPECIAL PURPOSE ELECTRICAL, BRANCHED, W142

CODE IDENT NO. 99974
SIZE A
6900041
REV E
SCALE —
SHEET 1 OF 29

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER - A - ND1002071 B - ND1002032 C - SEE CONFIGURATION SHEET FIG. 1
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	ASSEMBLE PER ND1002032.
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.
6	APPLY LEAD IDENTIFICATION TO SLEEVES PER ND1002019.
7	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
8	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
9	SECURE TO CABLE USING ITEM 27. MARKING TO READ AWAY FROM CONNECTOR
10	SERIALIZE PER ND1002023
11	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 28 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP.
12	MARK IDENTIFICATION BANDS AS NOTED IN TABLE I, .12 INCH HIGH PER ND1002019. CENTRALIZE.
13	LOCATE IDENTIFICATION SLEEVES ADJACENT TO SOLDER SLEEVES
14	APPLY GLYPTAL TO LEAD ENDS

NOTE NUMBER	GENERAL NOTES DESCRIPTION
15	IN CIRCUIT POINT FIELD --- I - INNER CONTACT O - OUTER CONTACT
16	TYPICAL INSTALLATION OF CONTACTS A - ASSEMBLE OUTER HYRING OVER BOTH LEADS B - ASSEMBLE OUTER SLEEVE, INNER SLEEVE, AND INNER CONTACT TO INNER LEAD IN ORDER LISTED. CRIMP CONTACT. C - ASSEMBLE OUTER CONTACT TO INNER CONTACT. SLIDE OUTER SLEEVE OVER OUTER CONTACT UNTIL SEATED. LAY OUTER LEAD AGAINST OUTER CONTACT IN OPEN SECTION OF OUTER SLEEVE. D - SLIDE HYRING FORWARD AGAINST SPRING AND CRIMP.
17	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD B - TO END SHIELD E - GRAY L - WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER W - WHITE X - LEAD SHIELD Y - WHITE WITH YELLOW TRACER
18	E1 THRU E9 STAGGER TO REDUCE BULK.
19	SPOT TIE AT 4.00 INCH INTERVALS WITHIN DESIGNATED DIMENSION.
20	SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE E11-B,E13-B, AND E17-B RESPECTIVELY.
21	ZIPPER TUBING SHALL HAVE Z TYPE TRACK AND ALUMINUM FOIL SHALL BE .003 + - .001 THICK.

NOTE NUMBER — GENERAL NOTES DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900041-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED, 132 FT. TOTAL LENGTH.
	2	1	6900041-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT., 160 FT. TOTAL LENGTH.
	3	1	6900041-003	WIRE, ND1002181, TYPE 1, CLASS 4, WHT. JKT., 24AWG, WHT., 68 FT. TOTAL LENGTH.
	4	1	6900041-004	WIRE, ND1002181, TYPE 3, CLASS 4, WHT. JKT., 24AWG, WHT/BLU, WHT/RED, WHT/YEL, 4 FT TOT LGTH
	5	1	6900041-005	WIRE, ND1002181, TYPE 1, CLASS 1, 20AWG, WHT., 44 FT. TOTAL LENGTH.
	6	1	6900041-006	WIRE, ND1002181, TYPE 1, CLASS 1, 24AWG, WHT., 61 FT TOTAL LENGTH.
	7	1	6900041-007	WIRE, COAXIAL, MIL-D-17/69A RG 188AU, 8 FT TOTAL LENGTH.
	8	1	6900041-008	ZIPPER TUBING PER ND1002155, TYPE III, 1.250 INCH DIA., 9.00 FT. TOTAL LENGTH
7	9	1	1897336-001	CONNECTOR, PLUG ELEC.
7	10	1	1897215-011	CONNECTOR, PLUG ELEC.
7	11	1	1897215-012	CONNECTOR, PLUG ELEC.
7	12	51	1016369-711	INNER SUPPORTING SLEEVE
7	13	53	1016369-188	CONTACT, INNER MALE
7	14	53	1016369-588	HYRING

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
7	15	51	1016369-713	OUTER SUPPORTING SLEEVING
7	16	53	1016369-488	CONTACT, OUTER FEMALE
	17	AR	1010655- 1	GLYPTAL, BLUE
7	18	79	1010490-228	INSULATION SLEEVING, ELEC.
	19		1016369-712	DELETED
	20		1016369-388	DELETED
	21		1016369-288	DELETED
7	22	7	1010763- 1	SOLDER SLEEVE
7	23	41	1010763- 2	SOLDER SLEEVE
7	24	7	1010490-138	INSULATION SLEEVING, ELEC.
7	25	1	1016128-011	BAND, IDENTIFICATION
7	26	3	1016128-041	BAND, IDENTIFICATION
	27	AR	MIL-T-713-B	LACING TAPE, TYPE P, CLASS 2, BLACK (ES2732)
	28	AR	MIL-I-631, TYPE F FORM T, BLACK GRADE A, CLASS 1	FILLER TAPE, .62 WIDE X .020 THICK
7	29	4	1016369-421	CONTACT, FEMALE
7	30	40	1010490-232	INSULATION SLEEVING, ELEC
	31		1016369-420	DELETED

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
7	32	2	1016282- 24	GROMMET
7	33	2	1897330-001	CLAMP, CABLE
7	34	2	1897331-001	ADAPTER, CABLE CLAMP
7	35	6	1016006-002	SPLICE REDUCER
7	36	7	1010490-258	INSULATION SLEEVING, ELEC.
7	37	125	1016369-424	CONTACT, MALE
7	38	1	1897391	CLAMP, STRAIN RELIEF
7	39	4	1015902- 49	LUG, TERMINAL
7	40	1	1016006-001	SPLICE REDUCER

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1			3.80 3.80	3.50 3.50				A,6B B,7	23, 18 18, 14	
A	1A	2	SHLD A1 P1-B5					.25 .18	NO NO		37	
A	1L		P1-C7 P2-17/O				.22	.18 .23	NO NO		37 16	SEE NOTE 16 TYP
A	1R		P1-C5 P2-17/I					.18 .22	NO NO		37 15, 12, 13	
A	2	1			3.80 3.80	3.50 3.50				A,6B B,7	23, 18 18, 14	
A	2A	2	SHLD A2 P1-A6					.25 .18	NO NO		37	
A	2L		P1-B7 P2-18/O				.22	.18 .23	NO NO		37 16	
A	2R		P1-A5 P2-18/I					.18 .22	NO NO		37 15, 12, 13	
A	3	1			3.80 3.80	3.50 3.50				A,6B B,7	23, 18 18, 14	
A	3A	2	SHLD A3 P1-C6					.25 .18	NO NO		37	
A	3L		P1-B8 P2-19/O				.22	.18 .23	NO NO		37 16	
A	3R		P1-B6 P2-19/I					.18 .22	NO NO		37 15, 12, 13	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	4	1			3.80 3.80	3.50 3.50				A,6B B,7	23, 18 18, 14	
A	4A	2	SHLD A4 P1-E6					.25 .18	NO NO		37	
A	4L		P1-D7 P2-20/O				.22	.18 .23	NO NO		37 16	
A	4R		P1-D6 P2-20/I					.18 .22	NO NO		37 15, 12, 13	
A	5	1			3.80 3.80	3.50 3.50				A,6B B,7	23, 18 18, 14	
A	5A	2	SHLD A5 P1-G6					.25 .18	NO NO		37	
A	5L		P1-F7 P2-21/O				.22	.18 .23	NO NO		37 16	
A	5R		P1-F6 P2-21/I					.18 .22	NO NO		37 15, 12, 13	
A	6	1			3.80 3.80	3.50 3.50				A,6B B,7	23, 18 18, 14	
A	6A	2	SHLD A6 P1-J6					.25 .18	NO NO		37	
A	6L		P1-H7 P2-22/O				.22	.18 .23	NO NO		37 16	
A	6R		P1-H6 P2-22/I					.18 .22	NO NO		37 15, 12, 13	

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 7	1				2.80 2.80	2.50 2.50				A,6B B,7	23, 18 18, 14	
A 7A	2		SHLD A7 P1-N5					.25 .18	NO NO		 37	
A 7L			P1-P7 P2-23/O				.22	.18 .23	NO NO		37 16	
A 7R			P1-P5 P2-23/I					.18 .22	NO NO		37 15, 12, 13	
A 8	1				3.80 3.80	3.50 3.50				A,6B B,7	23, 18 18, 14	
A 8A	2		SHLD A8 P1-H5					.25 .18	NO NO		 37	
A 8L			P1-J7 P2-24/O				.22	.18 .23	NO NO		37 16	
A 8R			P1-J5 P2-24/I					.18 .22	NO NO		37 15, 12, 13	
A 9	1				3.80 3.80	3.50 3.50				A,6A B,7	23, 18 18, 14	
A 9A	2		SHLD A9 E3					.25 .25	NO NO			
A 9L			P1-K1 P2-28/O				.22	.18 .23	NO NO		37 16	
A 9R			P1-K3 P2-28/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
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MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10	1				3.80 3.80	3.50 3.50				A,6A B,7	23, 18 18, 14	
A 10A	2		SHLD A10 E3					.25 .25	NO NO			
A 10L			P1-M2 P2-29/O				.22	.18 .23	NO NO		37 16	
A 10R			P1-M3 P2-29/I					.18 .22	NO NO		37 15, 12, 13	
A 11	1				3.80 3.80	3.50 3.50				A,6A B,7	23, 18 18, 14	
A 11A	2		SHLD A11 E3					.25 .25	NO NO			
A 11L			P1-N2 P2-30/O				.22	.18 .23	NO NO		37 16	
A 11R			P1-N3 P2-30/I					.18 .22	NO NO		37 15, 12, 13	
A 12	3				4.30 3.30	4.00 3.00				A,6A B,7	 30	
A 12A	2		E19 E1					.25 .25	NO NO			
A 12W			P1-A3 P2-1/O				.21	.18 .23	NO NO		37 16	USE WITH P2-1/I
A 12X			E19 SHLD A12									

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
SHEET 11 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	3				4.30 3.30	4.00 3.00				A,6A B,7	14 30	
A 13A			DELETED									
A 13W			P1-A4 P2-1/I					.18 .22	NO NO		37 15, 12, 13	
A 13X			E19 SHLD A13							C		
A 14	6		P1-C1 P2-2/O					.18 .23	NO NO		37 14, 16	USE WITH P2-2/I
A 15	3				4.80 4.80	4.50 4.50				A,6A B,7	22, 30 30	
A 15A	2		SHLD A15 E2					.25 .25	NO NO			
A 15W			P1-C4 P2-2/I					.18 .22	NO NO		37 15, 12, 13	
A 16	3				4.30 3.30	4.00 3.00				A,6A B,7	 30	
A 16A	2		E20 E1					.25 .25	NO NO			
A 16W			P1-D2 P2-3/O				.21	.18 .23	NO NO		37 16	USE WITH P2-3/I
A 16X			E20 SHLD A13									

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
SHEET 12 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17	3				4.30 3.30	4.00 3.00				A,6A B,7	14 30	
A 17A			DELETED									
A 17W			P1-D4 P2-3/I					.18 .22	NO NO		37 15, 12, 13	
A 17X			E20 SHLD A17							C		
A 18	6		P1-H2 P2-7/O					.18 .23	NO NO		37 14, 16	USE WITH P2-7/I
A 19	6		P1-H4 P2-7/I					.18 .22	NO NO		37 15, 12, 13	
A 20	6		P1-J2 P2-8/O					.18 .23	NO NO		37 14, 16	USE WITH P2-8/I
A 21	6		P1-J4 P2-8/I					.18 .22	NO NO		37 15, 12, 13	
A 22	6		P1-N4 P2-9/O					.18 .23	NO NO		37 14, 16	USE WITH P2-9/I
A 23	3				4.80 4.80	4.50 4.50				A,6A B,7	22, 30 30	
A 23A	2		SHLD A23 E2					.25 .25	NO NO			
A 23W			P1-E4 P2-9/I					.18 .22	NO NO		37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
SHEET 13 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 24	3				4.30 3.30	4.00 3.00				A,6A B,7	 30	
A 24A	2		E21 E2					.25 .25	NO			
A 24W			P1-F2 P2-10/0				 .21	.18 .23			37 16	
A 24X			E21 SHLD A24									
A 25	3				4.30 3.80	4.00 3.50				A,6A B,7	14 30	
A 25A			DELETED									
A 25W			P1-F4 P2-10/I					.18 .22	NO NO		37 15, 12, 13	
A 25X			E21 SHLD A25							C		
A 26	3				4.30 3.80	4.00 3.50				A,6A B,7	 30	
A 26A	2		E22 E1					.25 .25	NO			
A 26W			P1-B2 P2-11/0				 .21	.18 .23			37 16	 USE WITH P2-11/I
A 26X			E22 SHLD A26									

SIZE A | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR E | SHEET 14 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	3				4.30 3.80	4.00 3.50				A,6A B,7	14 30	
A 27A			DELETED									
A 27W			P1-B4 P2-11/I					.18 .22	NO NO		37 15, 12, 13	
A 27X			E22 SHLD A27							C		
A 28	3				4.30 3.80	4.00 3.50				A,6A B,7	 30	
A 28A	2		E23 E7					.25 .25	NO			
A 28W			P1-S2 P2-15/0				 .21	.18 .23			37 16	 USE WITH P2-15/I
A 28X			E23 SHLD A28									
A 29	3				4.30 3.30	4.00 3.50				A,6A B,7	14 30	
A 29A			DELETED									
A 29W			P1-S4 P2-15/I					.18 .22	NO NO		37 15, 12, 13	
A 29X			E23 SHLD A29							C		

SIZE A | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR E | SHEET 15 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 30	1				3.80 3.80	3.50 3.50				A,6A B,7	23, 18 18	
A 30A	2		SHLD A30 E7					.25 .25	NO NO			
A 30L			P1-T2 E10					.18 .25	NO NO		37	
A 30R			P1-T4 P2-16/I					.18 .22	NO NO		37 15, 12, 13	 USE WITH A86
A 31	6		P1-M6 P2-6/0					.18 .23	NO NO		37 16, 14	 USE WITH A84
A 32	3				3.80 3.80	3.50 3.50				A,6A B,7	22, 30 30	
A 32A	2		SHLD A32 E6					.25 .25	NO NO			
A 32W			P1-K6 P3-48/I				 .33	.18 .22	NO NO		37 15, 12, 13	 USE WITH P2-3/I
A 33	6		P1-K7 P3-48/0					.18 .23	NO NO		37 14, 16	
A 34	6		P1-U2 P2-33/0					.18 .23	NO NO		37 14, 16	 USE WITH P2-33/I
A 35	6		P1-U4 P2-33/I					.18 .22	NO NO		37 15, 12, 13	
A 36	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	

SIZE A | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR E | SHEET 16 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 36A	2		SHLD A36 P1-W4					.25 .18	NO NO		 37	
A 36L			P1-V2 P2-34/0				 .22	.18 .23	NO NO		37 16	
A 36R			P1-V4 P2-34/I					.18 .22	NO NO		37 15, 12, 13	
A 37	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 37A	2		SHLD A37 P1-X5					.25 .18	NO NO		 37	
A 37L			P1-W2 P2-35/0				 .22	.18 .23	NO NO		37 16	
A 37R			P1-X4 P2-35/I					.18 .22	NO NO		, 37 15, 12, 13	
A 38	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 38A	2		SHLD A38 P1-V5					.25 .18	NO NO		 37	
A 38L			P1-W7 P2-36/0				 .22	.18 .23	NO NO		37 16	
A 38R			P1-W5 P2-36/I					.18 .22	NO NO		, 37 15, 12, 13	
A 39	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	

SIZE A | CODE IDENT NO. 99974 | 6900041
SCALE-NONE | REV LTR E | SHEET 17 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 39A	2		SHLD A39 P1-T5					.25 .18	NO NO		37	
A 39L			P1-U7 P2-37/O				.22	.18 .22	NO NO		37 16	
A 39R			P1-U5 P2-37/I					.18 .22	NO NO		, 37 15, 12, 13	
A 40	1				4.30 4.30	4.00 4.00				A,6B B,7	23, 18 18, 14	
A 40A	2		SHLD A40 P1-R5					.25 .18	NO NO		37	
A 40L			P1-S7 P2-38/O				.22	.18 .23	NO NO		37 16	
A 40R			P1-S5 P2-38/I					.18 .22	NO NO		, 37 15, 12, 13	
A 41	3				4.30 3.80	4.00 3.50				A,6A B,7	30	
A 41A	2		E24 E4					.25 .25	NO NO			
A 41W			P1-P2 P3-5/O				.21	.18 .23	NO NO		37 16	USE WITH P1-5/I
A 41X			E24 SHLD A41									
A 42	3				4.30 3.50	4.00 3.50				A,6A B,7	14 30	

SIZE A	CODE IDENT NO. 99974	6900041		
SCALE-NONE	REV LTR	E	SHEET	18 OF 29

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 42A			DELETED									
A 42W			P1-P3 P3-5/I					.18 .22	NO NO		37 15, 12, 13	
A 42X			E24 SHLD A42							C		
A 43	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A 43A	2		SHLD A43 E4					.25 .25	NO NO			
A 43L			P1-R1 P3-6/O				.22	.18 .23	NO NO		37 16	
A 43R			P1-R3 P3-6/I					.18 .22	NO NO		, 37 15, 12, 13	
A 44	1				4.80 4.80	4.50 4.50				B,7 B,7	18 18, 14	
A 44L			P1-S1 P2-27/O				.22	.18 .23	NO NO		37 16	
A 44R			P1-S3 P2-27/I					.18 .22	NO NO		, 37 15, 12, 13	
A 45	1				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A 45A	2		SHLD A45 E6-B					.25 .38	NO NO			

SIZE A	CODE IDENT NO. 99974	6900041		
SCALE-NONE	REV LTR	E	SHEET	19 OF 29

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45L			P1-T1 P3-25/O				.22	.18 .23	NO NO		37 16	
A 45R			P1-T3 P3-25/I					.18 .22	NO NO		, 37 15, 12, 13	
A 46	4				4.80 4.80	4.50 4.50				A,6A B,7	23, 18 18, 14	
A 46A	2		SHLD A46 E6-B					.25 .38	NO NO			
A 46L			P1-W8 P3-23/O				.22	.18 .23	NO NO		37 16, 14	
A 46R			P1-W6 P3-23/I					.18 .22	NO NO		, 37 15, 12, 13	
A 46Y			P1-X6 P3-22/O					.18 .23	NO NO		37 16, 14	USE WITH A85
A 47	1				4.80 4.50	4.50 4.50				B,7 B,7	18 18, 14	
A 47L			P1-L2 P2-31/O				.22	.18 .23	NO NO		37 16	
A 47R			P1-K2 P2-31/I					.18 .22	NO NO		, 37 15, 12, 13	
A 48	1				4.80 4.80	4.50 4.50				A,6B B,7	23, 18 18, 14	
A 48A	2		SHLD A48 P1-C3					.25 .18	NO NO		37	

SIZE A	CODE IDENT NO. 99974	6900041		
SCALE-NONE	REV LTR	E	SHEET	20 OF 29

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 48L			P1-E2 P3-32/O				.22	.18 .23	NO NO		37 16	
A 48R			P1-B3 P3-32/I					.18 .22	NO NO		, 37 15, 12, 13	
A 49	1				4.80 4.80	4.50 4.50				A,6B B,7	23, 18 18, 14	
A 49A	2		SHLD A49 P1-E3					.25 .18	NO NO		37	
A 49L			P1-F1 P3-33/O				.22	.18 .23	NO NO		37 16	
A 49R			P1-D3 P3-33/I					.18 .22	NO NO		, 37 15, 12, 13	
A 50	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A 50A	2		SHLD A50 P1-G3					.25 .18	NO NO		37	
A 50L			P1-G1 P3-34/O				.22	.18 .23	NO NO		37 16	
A 50R			P1-F3 P3-34/I					.18 .22	NO NO		, 37 15, 12, 13	
A 51	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A 51A	2		SHLD A51 P1-J3					.25 .18	NO NO		37	

SIZE A	CODE IDENT NO. 99974	6900041		
SCALE-NONE	REV LTR	E	SHEET	21 OF 29

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 51L			P1-H1 P3-35/O				.22	.18 .23	NO NO		37 16	
A 51R			P1-H3 P3-35/I					.18 .22	NO NO		, 37 15, 12, 13	
A 52	5		P1-U3 E6-B					.18 .38	NO NO		37	
A 53	5		E6-BB P3-30					.38 .18	NO NO		29	
A 54	5		P1-V3 E8-B					.18 .38	NO NO		37	
A 55	5		E8-BB P3-21					.38 .18	NO NO		29	
→ A 56	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	←
A 56A	2		SHLD A56 P1-F5					.25 .18	NO NO		37	
A 56L			P1-G7 P2-25/O				.22	.18 .23	NO NO		37 16	
A 56R			P1-G5 P2-25/I					.18 .22	NO NO		, 37 15, 12, 13	
A 57	1				5.30 5.30	5.00 5.00				A,6B B,7	23, 18 18, 14	
A 57A	2		SHLD A57 P1-D5					.25 .18	NO NO		37	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
SHEET 22 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 57L			P1-E7 P2-26/O				.22	.18 .23	NO NO		37 16	
A 57R			P1-E5 P2-26/I					.18 .22	NO NO		, 37 15, 12, 13	
A 58	1				5.30 5.30	5.00 5.00				B,7 B,7	18 18, 14	
A 58L			P1-G2 P2-4/O				.22	.18 .23	NO NO		37 16	
A 58R			P1-G4 P2-4/I					.18 .22	NO NO		, 37 15, 12, 13	
A 59	3				5.30 5.30	5.00 5.00				A,6A B,7	22, 30 30	
→ A 59A	2		SHLD A59 E5					.25 .25	NO NO			←
A 59W			P1-P4 P2-14/I					.18 .22	NO NO		37 15, 12, 13	
A 60	6	4.00	E10 P2-14/O					.25 .23	NO NO		14, 16	
A 61	3				4.30 3.80	4.00 3.50				A,6A B,7	30	
A 61A	2		E25 E5					.25 .25	NO NO			
A 61W			P1-R2 P2-12/O				.21	.18 .23	NO NO		37 16	USE WITH P2-12/I

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
SHEET 23 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61X			E25 SHLD A61									
A 62	3				4.30 3.80	4.00 3.50				A,6A B,7	14 30	
A 62A			DELETED									
A 62W			P1-R4 P2-12/I					.18 .22	NO NO		37 15, 12, 13	
A 62X			E25 SHLD A61							C		
A 63	6		P1-N7 P2-41/O					.18 .23	NO NO		37 14, 16	
→ A 64	6		P1-N6 P2-41/I					.18 .22	NO NO		, 37 15, 12, 13	←
A 65	7				3.30 .44	3.00 .18				A,6B B,9	30, 23 30 , 14	
A 65A	6		A65X P1-P8					.25 .18	NO NO		37	
A 65B			DELETED									
A 65E			P1-P6 P2-40/I					.18 .18	NO NO		37 , 13	
A 65X			A65A P2-40/O					.25	NO NO		16	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
SHEET 24 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 66	7				3.30 .44	3.00 .18				A,6B A,9	30, 23 30 , 14	
A 66A	6		A66X P1-R7					.25 .18	NO NO		37	
A 66B			DELETED									
A 66E			P1-R6 P2-39/I					.18 .18	NO NO		37 , 13	
A 66X			A66A P2-39/O					.25	NO NO		16	
A 67	1				5.80 5.80	5.50 5.50				A,6B B,7	23, 18 18, 14	
→ A 67A	2		SHLD A67 P1-T6					.18	NO		37	←
A 67L			P1-S8 P2-43/O				.22	.18 .23	NO NO		37 16	
A 67R			P1-S6 P2-43/I					.22 .22	NO NO		, 37 15, 12, 13	
A 68	1				5.80 5.80	5.50 5.50				B,7 B,7	18 18, 14	
A 68L			P1-U8 P2-45/O				.22	.18 .23	NO NO		37 16	
A 68R			P1-U6 P2-45/I					.22 .22	NO NO		, 37 15, 12, 13	

SIZE A
CODE IDENT NO. 99974
6900041
SCALE-NONE
REV LTR E
SHEET 25 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 69	1				5.80 5.80	5.50 5.50				8,7 8,7	18 18, 14	
A 69L			P1-V7 P2-46/0				.22	.18 .23	NO NO		37 16	
A 69R			P1-V6 P2-46/I					.18 .22	NO NO		, 37 15, 12, 13	
A 70			DELETED									
A 71	5		E5 P2-13					.25 .16	NO NO		29	
A 72	5		E1 E9-B					.25 .38	NO NO			
A 73			DELETED									
A 74	5		E2 E9-B					.25 .38	NO NO			
A 75	5		E8-B E4					.38 .25	NO NO			
A 76	5		E3 E9-B					.25 .38	NO NO			
A 77			DELETED									
A 78	5		E7 E9-B					.25 .38	NO NO			

SIZE A	CODE IDENT NO. 99974	6900041	
SCALE-NONE	REV LTR	E	SHEET 26 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	5		E9-BB P2-44					.38 .16	NO NO		 29	
A 80	1				5.30 5.30	5.00 5.00				8,7 8,7	18 18, 14	
A 80A			DELETED									
A 80L			P1-W1 P3-31/0				.22	.18 .23	NO NO		37 16	
A 80R			P1-W3 P3-31/I					.18 .22	NO NO		, 37 15, 12, 13	
A 81			DELETED									
A 82			DELETED									
A 83	1				5.30 5.30	5.00 5.00				A,6A 8,7	23, 18 18, 14	
A 83A	2		SHLD A83 E6-B					.25 .38	NO NO			
A 83L			P1-B1 P3-27/0					.18 .23	NO NO		37 16	
A 83R			P1-C2 P3-27/I					.18 .22	NO NO		37 15, 12, 13	
A 84	6	8.00	P2-6/I FREE END					.22	NO		15, 12, 13	USE WITH A31 SEE NOTE 14

SIZE A	CODE IDENT NO. 99974	6900041	
SCALE-NONE	REV LTR	E	SHEET 27 OF 29

MIL 2084 9-65

CABLE ASSEMBLY W142 6900041 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 85	6	8.00	P3-22/I FREE END					.22	NO		15, 12, 13	USE WITH A46Y SEE NOTE 14
A 86	6	4.00	E10 P2-16/0					.25 .23	NO NO		 16, 14	 USE WITH A30R
A 87	5		E11-BB E12					.38 .20	NO NO			
A 88	5		E13-BB E14					.38 .20	NO NO			
A 89	5		E15-BB E16					.38 .20	NO NO			
A 90	5		E17-BB E18					.38 .20	NO NO			

SIZE A	CODE IDENT NO. 99974	6900041	
SCALE-NONE	REV LTR	E	SHEET 28 OF 29

MIL 2084 9-65

TABLE I

PLUG NO.	MARKING
P1	W142-P1(W157-P2)(J3-SCM)
P2	W142-P2(J1-TPA2)
P3	W142-P3(J2-TPA2)

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	C	REPLACES REV. B PER TDRR 20105		JAN 66	EJ WD
		SEE SHEET 1 FOR REVISION RECORD			

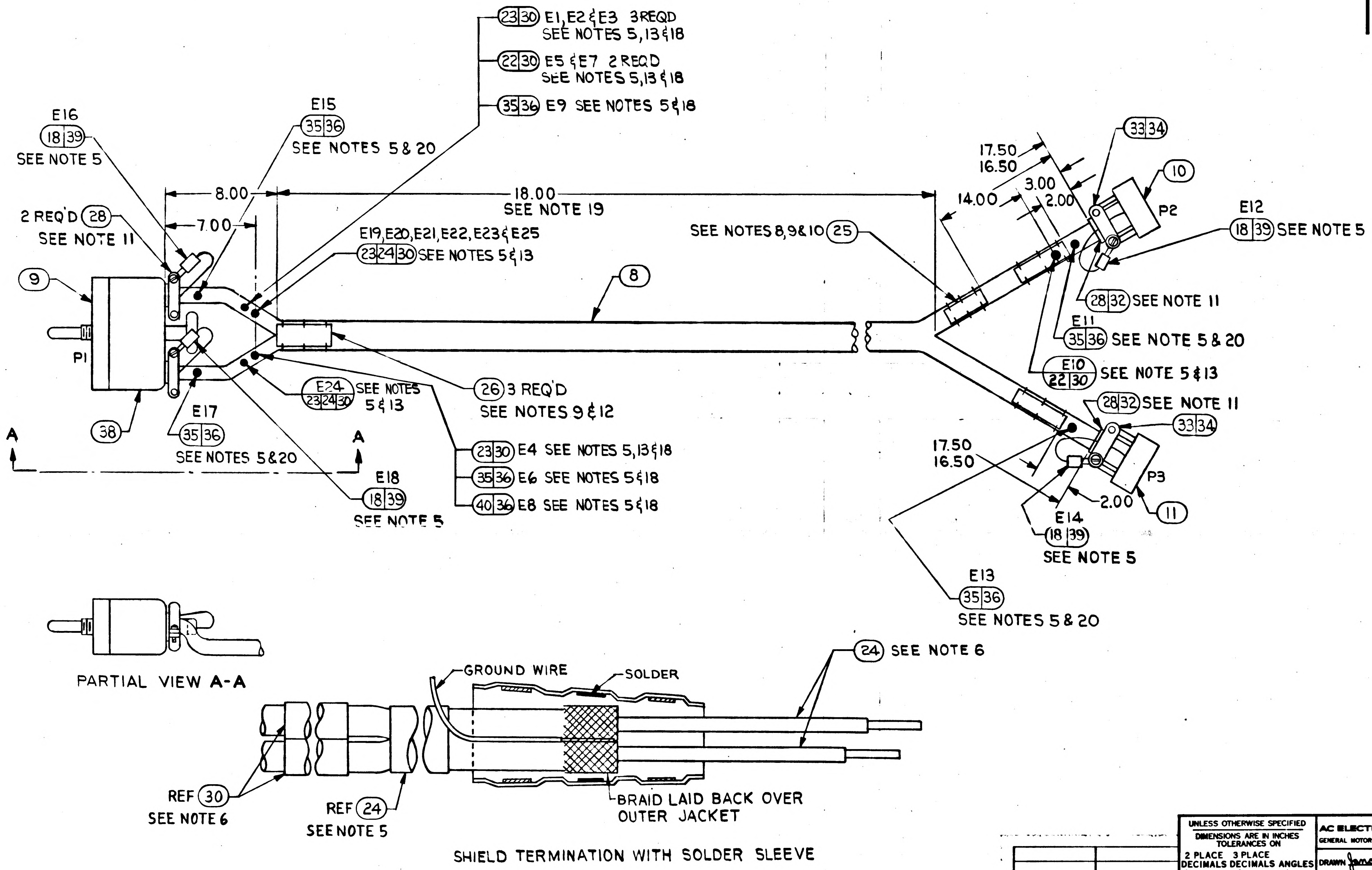
E16
(18)(39)
SEE NOTE 5
2 REQ'D (28)
SEE NOTE 11
(9)
P1
(38)
8.00
7.00
E15
(35)(36)
SEE NOTES 5&20
(23)(30) E1, E2 & E3 3 REQD
SEE NOTES 5,13&18
(22)(30) E5 & E7 2 REQD
SEE NOTES 5,13&18
(35)(36) E9 SEE NOTES 5&18
18.00
SEE NOTE 19
E19, E20, E21, E22, E23 & E25
(23)(24)(30) SEE NOTES 5&13
(8)
E24
(23)(24)(30) SEE NOTES 5&13
(26) 3 REQ'D
SEE NOTES 9&12
E17
(35)(36)
SEE NOTES 5&20
A
A
(23)(30) E4 SEE NOTES 5,13&18
(35)(36) E6 SEE NOTES 5&18
(40)(36) E8 SEE NOTES 5&18
E18
(18)(39)
SEE NOTE 5
SEE NOTES 8,9&10 (25)
17.50
16.50
3.00
14.00
2.00
(33)(34)
(10)
P2
E12
(18)(39) SEE NOTE 5
(28)(32) SEE NOTE 11
E11
(35)(36) SEE NOTE 5&20
E10
(22)(30) SEE NOTE 5&13
(28)(32) SEE NOTE 11
(33)(34)
17.50
16.50
P3
2.00
(11)
E14
(18)(39)
SEE NOTE 5
E13
(35)(36)
SEE NOTES 5&20
PARTIAL VIEW A-A
GROUND WIRE
SOLDER
(24) SEE NOTE 6
REF (30)
SEE NOTE 6
REF (24)
SEE NOTE 5
BRAID LAID BACK OVER
OUTER JACKET
SHIELD TERMINATION WITH SOLDER SLEEVE

FIGURE 1

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .50
3 PLACE DECIMALS ± -
ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Janowiak DATE 30 AUG 65
CHECKED MOLYE 10 SEP 65
APPROVED E SWANSON 30 SEP 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W142

SIZE D
CODE IDENT NO. 99974
6900041
SCALE NONE
SHEET 29 OF 29

6900043

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		INITIAL RELEASE CLASS A PER TDRR 23807		15 OCT 65	

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. NO CONFIGURATION REQUIRED.

CABLE USAGE TABLE (FOR REF)

DESIG. NO.	ISS	G&N
W131		X
W133	X	
W135		X
W137		X
W138		X
W139		X
W142		X
W143		X
W144	X	X
W157		X

			1			6900046	ADAPTER, CABLE (SCM)
			1			6900045	CABLE, ASSY, ELECT (W157)
			1			6900006	(W144)
			1			6900025	(W143)
			1			6900041	(W142)
			1			6900004	(W139)
			1			6900040	(W138)
			1			6900005	(W137)
			1			6900024	(W135)
			1			6900044	(W133)
			1			6900023	CABLE, ASSY, ELECT. (W131)
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

1900030	1900030	-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. J. Olson DATE 19AUG65
CHECKED Ed Foster 26AUG65
APPROVAL 26AUG65
APPROVAL 10/27/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4Nov65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE SET,
INTERCONNECT
(SPECIAL, LEM)

CODE IDENT NO. 99974
SIZE C
6900043
SCALE —
SHEET 1 OF 1

MIL 1078C—P

6900043

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. NO CONFIGURATION REQUIRED.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		INITIAL RELEASE CLASS A PER TDRR 23807		18 OCT 65	
B		REVISED PER TDRR 25425		25 JAN 66	

CABLE USAGE TABLE (FOR REF)

DESIG. NO.	ISS	GEN
W131		☒
W133	☒	
W135		☒
W137		☒
W138		☒
W139		☒
W142		☒
W143		☒
W144	☒	☒
W157		☒

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1			6900046	INTERCONNECTING BOX-SCM
			1			6900045	CABLE, ASSY, ELECT (W157)
			1			6900006	(W144)
			1			6900025	(W143)
			1			6900041	(W142)
			1			6900004	(W139)
			1			6900040	(W138)
			1			6900005	(W137)
			1			6900024	(W135)
			1			6900044	(W133)
			1			6900023	CABLE, ASSY, ELECT. (W131)

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Allen DATE 19 AUG 65
CHECKED Ed Foster 26 AUG 65
APPROVAL 26 AUG 65
APPROVAL 10/27/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE SET, INTERCONNECT (SPECIAL, LEM)

CODE IDENT NO. 99974 SIZE C 6900043
SCALE — SHEET 1 OF 1

MIL 1078C-P

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. NO CONFIGURATION REQUIRED.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		INITIAL RELEASE CLASS A PER TDRR 23807		18 OCT 65	
Ⓜ B		REVISED PER TDRR 25425		25 JAN 66	R. Kucek
C		REVISED PER TDRR 26106		15 FEB 66	OKD

CABLE USAGE TABLE (FOR REF)		
DESIG. NO.	ISS	G&N
W131		☒
W133	☒	
W135		☒
W137		☒
W138		☒
W142		☒
W143		☒
W144	☒	☒
W157		☒

			1			6900046-011	INTERCONNECTING BOX-SCM	
			1			6900045	CABLE, ASSY, ELECT	(W157)
			1			6900006	| | |	(W144)
			1			6900025	| | |	(W143)
			1			6900041	CABLE, ASSY, ELECT	(W142)
			1			6900040	CABLE, ASSY, ELECT	(W138)
			1			6900005	| | |	(W137)
			1			6900024	| | |	(W135)
			1			6900044	| | |	(W133)
			1			6900023	CABLE, ASSY, ELECT.	(W131)
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS			

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R. H. Olson DATE 19AUG65
CHECKED Ed Foster 26AUG65
APPROVAL 26AUG65
APPROVAL 10/27/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4Nov65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE SET, INTERCONNECT (SPECIAL, LEM)

CODE IDENT NO. 99974
SIZE C
6900043
SCALE —
SHEET 1 OF 1

MIL 1078C—P

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. NO CONFIGURATION REQUIRED.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		INITIAL RELEASE CLASS A PER TDRR 23807		18 OCT 65	
B		REVISED PER TDRR 25425		25 JAN 66	
C		REVISED PER TDRR 26106		15 FEB 66	DKD
D		REVISED PER TDRR 27560		4 APR 66	DKD JAC

CABLE USAGE TABLE (FOR REF)

DESIG. NO.	ISS	G&N
W131		X
W133	X	
W135		X
W137		X
W138		X
W142		X
W143		X
W144	X	X
W157		X

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		1	1			6900046-011	INTERCONNECTING BOX-SCM
		1	1			6900045	CABLE, ASSY, ELECT (W157)
		1	1			6900006	(W144)
		1	1			6900025	(W143)
		1	1			6900041	(W142)
		1	—			6900099	(W137)
		1	1			6900040	(W138)
		—	1			6900005	(W137)
		1	1			6900024	(W135)
		1	1			6900044	(W133)
		1	1			6900023	CABLE, ASSY, ELECT. (W131)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 19AUG65
CHECKED Ed Foster 26 AUG 65
APPROVAL 26AUG65
APPROVAL 10/27/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4 Nov 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE SET,
INTERCONNECT
(SPECIAL, LEM)

CODE IDENT NO. 99974
SIZE C
6900043
SCALE —
SHEET 1 OF 1

6900043 D

MIL 1078C—P

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. NO CONFIGURATION REQUIRED.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		INITIAL RELEASE CLASS A PER TDRR 23807		18 OCT 65	
B		REVISED PER TDRR 25425		25 JAN 66	
C		REVISED PER TDRR 26106		15 FEB 66	DKD
D		REVISED PER TDRR 27560		4 APR 66	DKD JAC
E		REVISED PER TDRR 28779		19 MAY 66	GM CP

CABLE USAGE TABLE (FOR REF)		
DESIG. NO.	ISS	G&N
W131		X
W133	X	
W135		X
W137		X
W138		X
W142		X
W143		X
W144	X	X
W157		X

	1	—	—			6900046-021	INTERCONNECTING BOX, SCM
	1	—	—			6900137	CABLE ASSY, ELECT (W142)
	1	—	—			6900134	(W138)
	1	—	—			6900143	(W133)
	1	—	—			6900144	CABLE ASSY ELECT (W131)
	—	1	1			6900046-011	INTERCONNECTING BOX-SCM
	1	1	1			6900045	CABLE, ASSY, ELECT (W157)
	1	1	1			6900006	(W144)
	1	1	1			6900025	(W143)
	—	1	1			6900041	(W142)
	1	1	—			6900099	(W137)
	—	1	1			6900040	(W138)
	—	—	1			6900005	(W137)
	1	1	1			6900024	(W135)
	—	1	1			6900044	(W133)
	—	1	1			6900023	CABLE, ASSY, ELECT. (W131)
	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R.H. Olson DATE 19AUG65
CHECKED Ed Foster 26AUG65
APPROVAL 26AUG65
APPROVAL 10/27/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4Nov65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE SET,
INTERCONNECT
(SPECIAL, LEM)

CODE IDENT NO. 99974
SIZE C
6900043
SCALE —
SHEET 1 OF 1

MIL 1078C—P

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. NO CONFIGURATION REQUIRED.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		INITIAL RELEASE CLASS A PER TDRR 23807		18 OCT 65	PT
B		REVISED PER TDRR 25425		25 JAN 66	
C		REVISED PER TDRR 26106		15 FEB 66	DKD
D		REVISED PER TDRR 27560		4 APR 66	DKD JAC
E		REVISED PER TDRR 28779		19 MAY 66	GM CP
F		REVISED PER TDRR 32131		3 DEC 66	TD

CABLE USAGE TABLE (FOR REF)

DESIG. NO.	ISS	G&N
W131		☒
W133	☒	
W135		☒
W137		☒
W138		☒
W142		☒
W143		☒
W144	☒	☒
W157		☒

041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	-	-	-			6900046-031	INTERCONNECTING BOX, SCM
1	-	-	-			6900153	CABLE ASSY, ELECT (W157)
1	1	-	-			6900046-021	INTERCONNECTING BOX, SCM
1	1	-	-			6900137	CABLE ASSY, ELECT (W142)
1	1	-	-			6900134	(W138)
1	1	-	-			6900143	(W133)
1	1	-	-			6900144	CABLE ASSY ELECT (W131)
-	-	1	1			6900046-011	INTERCONNECTING BOX-SCM
-	1	1	1			6900045	CABLE, ASSY, ELECT (W157)
1	1	1	1			6900006	(W144)
1	1	1	1			6900025	(W143)
-	-	1	1			6900041	(W142)
1	1	1	-			6900099	(W137)
-	-	1	1			6900040	(W138)
-	-	-	1			6900005	(W137)
1	1	1	1			6900024	(W135)
-	-	1	1			6900044	(W133)
-	-	1	1			6900023	CABLE, ASSY, ELECT. (W131)

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN 19AUG65 DATE
CHECKED Ed Foster 26AUG65
APPROVAL 26AUG65
APPROVAL 9/27/65
NASA APPROVAL A. G. METZGER
MIT APPROVAL 4Nov65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE SET, INTERCONNECT (SPECIAL, LEM)

CODE IDENT NO. 99974
SIZE C
6900043
SCALE —
SHEET 1 OF 1

MIL 1078C—P

APPLICATION	
NEXT ASSY	USED ON
6900043-011	1900030

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACES REV(-) WITH CHANGE PER MXC-204908; WAS "C" SIZE WORD DRAWING	17SEP 65	PHG EF
B	REVISED PER MXC-206061	19 OCT. 65	JWP EF
C	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	RLP CW

REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS	REV						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
OF SHEETS	SHEET						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A.J. FLUDER DATE 19AUG65
CHECKED C.PIOJDA 10 SEP 65
APPROVAL R.PIERINI 10 SEP 65
APPROVAL Ugelman 10/26/65

NASA APPROVAL A. C. METZGER
MIT APPROVAL W Ryffer 4 Nov 65

CONTRACT NAS9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
SPECIAL PURPOSE
BRANCHED ELECTRICAL
W133

CODE IDENT NO. 99974
SIZE A
6900044
REV C

SCALE ——
SHEET 1 OF 71

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	C														
48	C														
49	C														
50	C														
51	C														
52	C														
53	C														
54	C														
55	C														
56	C														
57	C														
58	C														
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61	C														
62	C														
63	C														
64	C														
65	C														
66	C														
67	C														
68	C														
69	C														
70	C														
71	C														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION C

NASA DRAWING NO. 6900044
SHEET 2 OF 71

GENERAL NOTES

NOTE NUMBER — DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 LACE HARNESS USING ITEM 26.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019.

6 APPLY LEAD IDENTIFICATIONS PER ND 1002019.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 POSITION IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
A - FROM END SHIELD
B - TO END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER.
W - WHITE
Y - WHITE WITH YELLOW TRACER.

11 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

MANNED SPACECRAFT CENTER
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SCALE-NONE REV LTR C SHEET 3 OF 71

GENERAL NOTES

NOTE NUMBER — DESCRIPTION

12 ITEMS 50 (13) AND ITEM 29 (85) SUPPLIED WITH ITEM 7.
ITEMS 50 (13) AND ITEM 30 (85) SUPPLIED WITH ITEMS 9, 10 AND 12.
ITEM 50(9) AND ITEM 29 (61) SUPPLIED WITH ITEM 11.

13 SECURE TO CABLE USING ITEM 26, MARKING TO READ AWAY FROM CONNECTOR. ALIGN CENTER LINE OF BAND AND OF ASSOCIATED CONNECTOR MASTER KEY SLOT TO BE COLINEAR WITHIN + OR -0.25 IN.

14 MARK IDENTIFICATION BANDS AS NOTED IN TABLE 1,.12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

15 FILL THE SPACE BETWEEN WIRE BUNDLE AND STRAIN RELIEF CLAMP USING ITEM 23 TO SECURE WIRE BUNDLE IN THE CLAMP.

16 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

17 GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING FURNISHED PLUGS ITEM 50.

18 SOLDER PER MIL-S-6872 (ES2505-1) USING ITEM 48 OR ITEMS 46 AND 47.

19 SERIALIZE PER ND1002023.

20 LEADS USE COMMON ACCESSORY

21 IN CIRCUIT POINT FIELD
I - INDICATES INNER LEAD
O - INDICATES OUTER LEAD

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GENERAL NOTES

NOTE NUMBER — DESCRIPTION

22 TYPICAL INSTALLATION OF CONTACTS AND ASSOCIATED HARDWARE---
ASSEMBLE ITEM 33 OVER BOTH LEADS (I AND O). ASSEMBLE ITEM 35, ITEM 34 OR 51, AND ITEM 32 OR 40 TO INNER LEAD IN ORDER LISTED. CRIMP ITEM 32 OR 40. ASSEMBLE ITEM 31 OR 41 TO ITEM 32 OR 40. SLIDE ITEM 35 OVER ITEM 31 OR 41 UNTIL SEATED. LAYOUTER LEAD AGAINST ITEM 31 OR 41 IN OPEN SECTION OF ITEM 35. SLIDE ITEM 33 FORWARD AGAINST SPRING AND CRIMP.

23 DELETED

24 ON COND A284 ONE ITEM 31 TO BE ADDED TO ACCESSORIES ON TO SIDE (P8-41/I).

25 ASSEMBLE PER ND1002032.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

MANNED SPACECRAFT CENTER
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SCALE-NONE REV LTR C SHEET 5 OF 71

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	1	1	1897215-004	CONNECTOR, PLUG ELEC.
	2	1	6900050-011	CONNECTOR, PLUG ELEC.
	3	1	2900714-011	CONNECTOR, PLUG ELEC.
8	4	1	1897215-005	CONNECTOR, PLUG ELEC.
8	5	1	1897215-003	CONNECTOR, PLUG ELEC.
8	6	1	1897215-013	CONNECTOR, PLUG ELEC.
8	7	1	1897250-001	CONNECTOR, PLUG ELEC.
8	8	1	1897215-011	CONNECTOR, PLUG ELEC.
8	9	1	1897249-204	CONNECTOR, PLUG ELEC.
8	10	1	1897249-001	CONNECTOR, PLUG ELEC.
8	11	1	1897250-006	CONNECTOR, PLUG ELEC.
8	12	1	1897249-004	CONNECTOR, PLUG ELEC.
8	13	1	1897232-231	CONNECTOR, PLUG ELEC.
	14	1	6900044-001	WIRE ND1002181 TYPE 1, CLASS 1, 24AWG, WHT. 100FT. TOTAL LENGTH
	15	1	6900044-002	WIRE ND1002181 TYPE 2, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU 411FT. TOTAL LENGTH
	16	1	6900044-003	WIRE ND1002181 TYPE 3, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU, WHT/YEL 24FT. TOTAL LENGTH

MANNED SPACECRAFT CENTER
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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900044-004	WIRE ND1002181, TYPE 1, CLASS 1, 22AWG, WHT. 136FT. TOTAL LENGTH
	18	1	6900044-005	WIRE ND1002181 TYPE 1, CLASS 1, 16AWG, WHT 44FT TOTAL LENGTH
8	19	179	1010763- 2	SOLDER SLEEVE
8	20	298	1010490-228	INSULATION SLEEVING
8	21	6	1016006-002	SPLICE REDUCER
8	22	6	1010490-258	INSULATION SLEEVING
	23	AR	1901390	FILLER TAPE
8	24	14	1016128-041	BAND IDENTIFICATION
8	25	1	1016128-011	BAND IDENTIFICATION
	26	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2 BLACK (ES2732 NO. 18)
	27	1	6900044-006	WIRE ND1002181, TYPE 2, CLASS 4, WHT. JKT. 24AWG WHT/RED, WHT/BLU 344FT. TOTAL LENGTH
8	28	344	1897300-001	CONTACT SPRING CLIP
8	29		1897190- 1	CONTACT PIN
8	30		1897190- 2	CONTACT SOCKET
8	31	48	1016369-288	CONTACT OUTER MALE
8	32	50	1016369-388	CONTACT INNER FEMALE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE - NONE	REV LTR ~~B~~ C		SHEET 7 OF 71

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LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	33	106	1016369-588	HYRING
8	34	49	1016369-712	SLEEVE INNER
8	35	105	1016369-713	SLEEVE OUTER
8	36	1	1016369-721	CONTACT FEMALE
8	37	3	1016369-421	CONTACT FEMALE
8	38	31	1016369-420	CONTACT MALE
8	39	8	1016369-720	CONTACT MALE
8	40	58	1016369-188	CONTACT INNER MALE
8	41	57	1016369-488	CONTACT OUTER FEMALE
8	42	4	1010933-105	STRAIN RELIEF CLAMP
8	43	1	1010933-104	STRAIN RELIEF CLAMP
	44	1	6900044-007	WIRE ND1002181 TYPE 3, CLASS 4 WHT JKT 24AWG, WHT/RED, WHT/BLU, WHT/YEL, 11FT. TOTAL LENGTH
	45	1	6900044-008	WIRE ND1002181 TYPE 1, CLASS 4, WHT JKT 24AWG, WHT, 43FT. TOTAL LENGTH
	46	AR	SN60WS	SOLDER QQ-S-571(ES2175-1)
	47	AR	MIL-F-14256 TYPE A OR W	FLUX(ES2798)
	48	AR	SN60WRAP	SOLDER QQ-S-571(ES2175-3)
8	49	12	1010763- 1	SOLDER SLEEVE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	50	[illegible]	1016558-001	SEALING PLUG
8	51	57	1016369-711	SLEEVE INNER
8	52	1	1897215-012	CONNECTOR, PLUG ELEC.
	53	1	6900044-009	WIRE ND1002181 TYPE 2, CLASS 4, WHT JKT 16AWG WHT/RED WHT/BLU 6FT. TOTAL LENGTH
8	54	2	1016006-004	SPLICE REDUCER
8	55	2	1010490-284	INSULATION SLEEVING
8	56	6	1897331-001	ADAPTER, CABLE CLAMP
8	57	6	1897330-001	CLAMP, CABLE
8	58	22	1010490-232	INSULATION SLEEVING
8	59	2	1010490-226	INSULATION SLEEVING

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
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MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTES 9, 22
A 1A	17		SHLD A1					.25	NO			
			P3-340	12				.18	NO		28	
A 1B	14		P4-2/0	2				.23	NO		31, 33	
			SHLD A1					.25	NO			
A 1L			P3-240	12				.18	NO		28	
			P4-3/0	2			.32	.23	NO		31	
A 1R			P3-140	12				.18	NO		28	
			P4-3/1	2				.21	NO		32, 34, 35	
A 2	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 2A	17		SHLD A2					.25	NO			
			P3-640	12				.18	NO		28	
A 2B	14		P4-2/1	2				.21	NO		32, 34, 35	
			SHLD A2					.25	NO			
A 2L			P3-540	12				.18	NO		28	
			P4-1/0	2			.32	.23	NO		31	
A 2R			P3-440	12				.18	NO		28	
			P4-1/1	2				.21	NO		32, 34, 35	
A 3	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 3A	17		SHLD A3					.25	NO			
			P3-341	12				.18	NO		28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE - NONE	REV LTR ~~B~~ C		SHEET 10 OF 71

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CABLE ASSEMBLY W133 6900044 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	14		P4-11/0	2				.23	NO		31, 33	
			SHLD A3					.25	NO			
A 3L			P3-241	12				.18	NO		28	
			P4-12/0	2			.32	.23	NO		31	
A 3R			P3-141	12				.18	NO		28	
			P4-12/I	2				.21	NO		32, 34, 35	
A 4	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 4A	17		SHLD A4					.25	NO			
			P3-641	12				.18	NO		28	
A 4B	14		P4-11/I	2				.21	NO		32, 34, 35	
			SHLD A4					.25	NO			
A 4L			P3-541	12				.18	NO		28	
			P4-10/0	2			.32	.23	NO		31	
A 4R			P3-441	12				.18	NO		28	
			P4-10/I	2				.21	NO		32, 34, 35	
A 5	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 5A	17		SHLD A5					.25	NO			
			P3-342	12				.18	NO		28	
A 5B	14		P4-5/0	2				.23	NO		31, 33	
			SHLD A5					.25	NO			
A 5L			P3-242	12				.18	NO		28	
			P4-6/0	2			.32	.21	NO		31	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044
SCALE - NONE	REV LTR C	SHEET 11 OF 71

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CABLE ASSEMBLY W133 6900044 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 5R			P3-142	12				.18	NO		28	
			P4-6/I	2				.21	NO		32, 34, 35	
A 6	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 6A	17		SHLD A6					.25	NO			
			P3-642	12				.18	NO		28	
A 6B	14		P4-5/I	2				.21	NO		32, 34, 35	
			SHLD A6					.25	NO			
A 6L			P3-542	12				.18	NO		28	
			P4-4/0	2			.32	.23	NO		31	
A 6R			P3-442	12				.18	NO		28	
			P4-4/I	2				.21	NO		32, 34, 35	
A 7	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 7A	17		SHLD A7					.25	NO			
			P3-343	12				.18	NO		28	
A 7B	14		P4-14/0	2				.23	NO		31, 33	
			SHLD A7					.25	NO			
A 7L			P3-243	12				.18	NO		28	
			P4-15/0	2			.32	.23	NO		31	
A 7R			P3-143	12				.18	NO		28	
			P4-15/I	2				.21	NO		32, 34, 35	
A 8	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044
SCALE - NONE	REV LTR C	SHEET 12 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 8A	17		SHLD A8					.25	NO			
			P3-643	12				.18	NO		28	
A 8B	14		P4-14/I	2				.21	NO		32, 34, 35	
			SHLD A8					.25	NO			
A 8L			P3-543	12				.18	NO		28	
			P4-13/0	2			.32	.23	NO		31	
A 8R			P3-443	12				.18	NO		28	
			P4-13/I	2				.21	NO		32, 34, 35	
A 9	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 9A	17		SHLD A9					.25	NO			
			P3-344	12				.18	NO		28	
A 9B	14		P4-8/0	2				.23	NO		31, 33	
			SHLD A9					.25	NO			
A 9L			P3-244	12				.18	NO		28	
			P4-9/0	2			.32	.23	NO		31	
A 9R			P3-144	12				.18	NO		28	
			P4-9/I	2				.21	NO		32, 34, 35	
A 10	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 10A	17		SHLD A10					.25	NO			
			P3-644	12				.18	NO		28	
A 10B	14		P4-8/I	2				.21	NO		32, 34, 35	
			SHLD A10					.25	NO			

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MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10L			P3-544	12				.18	NO		28	
			P4-7/0	2			.32	.23	NO		31	
A 10R			P3-444	12				.18	NO		28	
			P4-7/I	2				.21	NO		32, 34, 35	
A 11	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 11A	17		SHLD A11					.25	NO			
			P3-345	12				.18	NO		28	
A 11B	14		P4-17/0	2				.23	NO		31, 33	
			SHLD A11					.25	NO			
A 11L			P3-245	12				.18	NO		28	
			P4-18/0	2			.32	.23	NO		31	
A 11R			P3-145	12				.18	NO		28	
			P4-18/I	2				.21	NO		32, 34, 35	
A 12	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 12A	17		SHLD A12					.25	NO			
			P3-645	12				.18	NO		28	
A 12B	14		P4-17/I	2				.21	NO		32, 34, 35	
			SHLD A12					.25	NO			
A 12L			P3-545	12				.18	NO		28	
			P4-16/0	2			.32	.23	NO		31	
A 12R			P3-445	12				.18	NO		28	
			P4-16/I	2				.21	NO		32, 34, 35	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044
SCALE - NONE	REV LTR C	SHEET 14 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 13A	17		SHLD A13 P3-346	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 13B	17		P5-15 SHLD A13	4				.15 .25	NO NO		30	
A 13L			P3-246 P5-14	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 13R			P3-146 P5-13	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 14	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 14A	17		SHLD A14 P3-646	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 14B	17		P5-18 SHLD A14	4				.15 .25	NO NO		30	
A 14L			P3-546 P5-17	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 14R			P3-446 P5-16	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 15	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 15A	17		SHLD A15 P3-347	 12				.25 .18	NO NO		 28	 SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ C
SHEET 15 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15B	17		P5-3 SHLD A15	4				.15 .25	NO NO		30	
A 15L			P3-247 P5-2	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 15R			P3-147 P5-1	12 4				.18 .15	NO NO		28 30	
A 16	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 16A	17		SHLD A16 P3-647	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 16B	17		P5-6 SHLD A16	4				.15 .25	NO NO		30	
A 16L			P3-547 P5-5	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 16R			P3-447 P5-4	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 17	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 17A	17		SHLD A17 P3-348	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 17B	17		P5-21 SHLD A17	4				.15 .25	NO NO		30	
A 17L			P3-248 P5-20	12 4				.18 .15	NO NO		28 30	SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ C
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MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17R			P3-148 P5-19	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 18	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 18A	17		SHLD A18 P3-648	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 18B	17		P5-24 SHLD A18	4				.15 .25	NO NO		30	
A 18L			P3-548 P5-23	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 18R			P3-448 P5-22	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 19	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 19A	17		SHLD A19 P3-349	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 19B	17		P5-9 SHLD A19	4				.15 .25	NO NO		30	
A 19L			P3-249 P5-8	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 19R			P3-149 P5-7	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 20	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ C
SHEET 17 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 20L			P2-K11 P3-528	15 12				.18 .18	NO NO		28 28	
A 20R			P2-H11 P3-428	15 12				.18 .18	NO NO		28 28	
A 21	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	
A 21L			P2-K10 P3-328	15 12				.18 .18	NO NO		28 28	
A 21R			P2-H10 P3-228	15 12				.18 .18	NO NO		28 28	
A 22	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 22A	17		SHLD A22 P2-B33	 15				.25 .18	NO NO		 28	
A 22B	17		P3-329 SHLD A22	12				.18 .25	NO NO		28	
A 22L			P2-B34 P3-229	15 12				.18 .18	NO NO		28 28	
A 22R			P2-B35 P3-129	15 12				.18 .18	NO NO		28 28	
A 23	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 23A	17		SHLD A23 P2-D33	 15				.25 .18	NO NO		 28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ C
SHEET 18 OF 71

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CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23B	17		P3-629 SHLD A23	12				.18 .25	NO NO		28	
A 23L			P2-D34 P3-529	15 12				.18 .18	NO NO		28 28	
A 23R			P2-D35 P3-429	15 12				.18 .18	NO NO		28 28	
A 24	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 24A	17		SHLD A24 P2-G33	 15				.25 .18	NO NO		 28	
A 24B	17		P3-330 SHLD A24	12				.18 .25	NO NO		28	
A 24L			P2-G34 P3-230	15 12				.18 .18	NO NO		28 28	
A 24R			P2-G35 P3-130	15 12				.18 .18	NO NO		28 28	
A 25	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 25A	17		SHLD A25 P2-C33	 15				.25 .18	NO NO		 28	
A 25B	17		P3-630 SHLD A25	12				.18 .25	NO NO		28	
A 25L			P2-C34 P3-530	15 12				.18 .18	NO NO		28 28	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE REV LTR ~~B~~C SHEET 19 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P2-C35 P3-430	15 12				.18 .18	NO NO		28 28	
A 26	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 26A	17		SHLD A26 P2-F33	 15				.25 .18	NO NO		 28	
A 26B	17		P3-331 SHLD A26	12				.18 .25	NO NO		28	
A 26L			P2-F34 P3-231	15 12				.18 .18	NO NO		28 28	
A 26R			P2-F35 P3-131	15 12				.18 .18	NO NO		28 28	
A 27	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 27A	17		SHLD A27 P2-H33	 15				.25 .18	NO NO		 28	
A 27B	17		P3-631 SHLD A27	12				.18 .25	NO NO		28	
A 27L			P2-H34 P3-531	15 12				.18 .18	NO NO		28 28	
A 27R			P2-H35 P3-431	15 12				.16 .18	NO NO		28 28	
A 28	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE REV LTR ~~B~~C SHEET 20 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 28A	17		SHLD A28 E4	 22				.25 .38	NO NO			
A 28B	17		P5-33 SHLD A28	4				.15 .25	NO NO		30	
A 28L			P3-232 P5-32	12 4				.18 .15	NO NO		28 30	
A 28R			P3-132 P5-31	12 4				.18 .15	NO NO		28 30	
A 29	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 29A	17		SHLD A29 E4	 22				.25 .38	NO NO			
A 29B	17		P5-30 SHLD A29	4				.15 .25	NO NO		30	
A 29L			P3-532 P5-29	12 4				.18 .15	NO NO		28 30	
A 29R			P3-432 P5-28	12 4				.18 .15	NO NO		28 [illegible]	
A 31	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 31A	17		SHLD A31 E4	 22				.25 .38	NO NO			
A 31B	17		P5-36 SHLD A31	4				.15 .25	NO NO		30	

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HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE REV LTR ~~B~~C SHEET 21 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31L			P3-533 P5-35	12 4				.18 .15	NO NO		28 30	
A 31R			P3-433 P5-34	12 4				.18 .15	NO NO		28 30	
A 32	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 32A	17		SHLD A32 E4	 22				.25 .38	NO NO			
A 32B	17		P5-39 SHLD A32	4				.15 .25	NO NO		30	
A 32L			P3-234 P5-38	12 4				.18 .15	NO NO		28 30	
A 32R			P3-134 P5-37	12 4				.18 .15	NO NO		28 30	
A 33	17		P2-H8 P3-136	15 12				.18 .18	NO NO		28 28	
A 34	17		P2-K10 P3-336	15 12				.18 .18	NO NO		28 28	
A 35	14		P3-113 P9-37/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 36	14		P3-612 P9-37/O	12 6				.18 .23	NO NO		28 41, 33	
A 37	17		P3-512 P9-38	12 6				.18 .21	NO NO		28 37	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE REV LTR ~~B~~C SHEET 22 OF 71

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	38	14		P3-412 P9-36/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	39	14		P3-312 P9-36/0	12 6				.18 .23	NO NO		28 41, 33	
A	40	17		P3-112 P9-52	12 6				.18 .21	NO NO		28 37	
A	41	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	41A	17		SHLD A41 P3-111	 12				.25 .18	NO NO		 28	
A	41B	17		P9-32 SHLD A41	6				.21 .25	NO NO		37	
A	41L			P3-211 P9-31/0	12 6			 .22	.18 .23	NO NO		28 41	
A	41R			P3-311 P9-31/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	42	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	42A	17		SHLD A42 P3-410	 12				.25 .18	NO NO		 28	
A	42B	14		P9-2/I SHLD A42	6				.21 .25	NO NO		40, 51, 35	
A	42L			P3-510 P9-1/0	12 6			 .22	.18 .23	NO NO		28 41	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ C
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CABLE ASSEMBLY W133 6900044 ~~B~~ C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	42R			P3-610 P9-1/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	43	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	43A	17		SHLD A43 P3-110	 12				.25 .18	NO NO		 28	
A	43B	14		P9-2/0 SHLD A43	6				.23 .25	NO NO		41, 33	
A	43L			P3-210 P9-3/0	12 6			 .22	.18 .23	NO NO		28 41	
A	43R			P3-310 P9-3/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	44	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	44A	17		SHLD A44 P3-409	 12				.25 .18	NO NO		 28	
A	44B	14		P9-5/I SHLD A44	6				.21 .25	NO NO		40, 51, 35	
A	44L			P3-509 P9-4/0	12 6			 .22	.18 .23	NO NO		28 41	
A	44R			P3-609 P9-4/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	45	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ C
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CABLE ASSEMBLY W133 6900044 ~~B~~ C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	45A	17		SHLD A45 P3-109	 12				.25 .18	NO NO		 28	
A	45B	14		P9-5/0 SHLD A45	6				.23 .25	NO NO		41, 33	
A	45L			P3-209 P9-6/0	12 6			 .22	.18 .23	NO NO		28 41	
A	45R			P3-309 P9-6/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	46	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	46A	17		SHLD A46 P3-408	 12				.25 .18	NO NO		 28	
A	46B	14		P9-8/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A	46L			P3-508 P9-7/0	12 6			 .22	.18 .23	NO NO		28 41	
A	46R			P3-608 P9-7/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	47	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	47A	17		SHLD A47 P3-108	 12				.25 .18	NO NO		 28	
A	47B	14		P9-8/0 SHLD A47	6				.23 .25	NO NO		41, 33	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ C
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CABLE ASSEMBLY W133 6900044 ~~B~~ C

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	47L			P3-208 P9-9/0	12 6			 .22	.18 .23	NO NO		28 41	
A	47R			P3-308 P9-9/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	48	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	48A	17		SHLD A48 P3-407	 12				.25 .18	NO NO		 28	
A	48B	14		P9-11/I SHLD A48	6				.21 .25	NO NO		40, 51, 35	
A	48L			P3-507 P9-10/0	12 6			 .22	.18 .23	NO NO		28 41	
A	48R			P3-607 P9-10/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	49	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	49A	17		SHLD A49 P3-107	 12				.25 .18	NO NO		 28	
A	49B	14		P9-11/0 SHLD A49	6				.23 .25	NO NO		41, 33	
A	49L			P3-207 P9-12/0	12 6			 .22	.18 .23	NO NO		28 41	
A	49R			P3-307 P9-12/I	12 6				.18 .21	NO NO		28 40, 51, 35	

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HOUSTON, TEXAS
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6900044
SCALE-NONE
REV LTR ~~B~~ C
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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 50	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 50A	17		SHLD A50 P3-406	 12				.25 .18	NO NO		 28	
A 50B	14		P9-14/I SHLD A50	6				.21 .25	NO NO		40, 51, 35	
A 50L			P3-506 P9-13/O	12 6			 .22	.18 .23	NO NO		28 41	
A 50R			P3-606 P9-13/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 51	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 51A	17		SHLD A51 P3-106	 12				.25 .18	NO NO		 28	
A 51B	14		P9-14/O SHLD A51	6				.23 .25	NO NO		41, 33	
A 51L			P3-206 P9-15/O	12 6			 .22	.18 .23	NO NO		28 41	
A 51R			P3-306 P9-15/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 52	14		P3-213 P9-39/O	12 6				.18 .23	NO NO		28 41, 33	
A 53	14		P3-313 P9-39/I	12 6				.18 .21	NO NO		28 40, 51, 35	

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HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE

REV LTR ~~B~~ C

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 54	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 54A	17		SHLD A54 P3-405	 12				.25 .18	NO NO		 28	
A 54B	14		P9-17/I SHLD A54	6				.21 .25	NO NO		40, 51, 35	
A 54L			P3-505 P9-16/O	12 6			 .22	.18 .23	NO NO		28 41	
A 54R			P3-605 P9-16/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 55	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 55A	17		SHLD A55 P3-105	 12				.25 .18	NO NO		 28	
A 55B	14		P9-17/O SHLD A55	6				.23 .25	NO NO		41, 33	
A 55L			P3-205 P9-18/O	12 6			 .22	.18 .23	NO NO		28 41	
A 55R			P3-305 P9-18/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 56	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 56A	17		SHLD A56 P3-404	 12				.25 .18	NO NO		 28	

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6900044

SCALE - NONE

REV LTR ~~B~~ C

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 56B	14		P9-20/I SHLD A56	6				.21 .25	NO NO		40, 51, 35	
A 56L			P3-504 P9-19/O	12 6			 .22	.18 .23	NO NO		28 41	
A 56R			P3-604 P9-19/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 57	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 57A	17		SHLD A57 P3-104	 12				.25 .18	NO NO		 28	
A 57B	14		P9-20/O SHLD A57	6				.23 .25	NO NO		41, 33	
A 57L			P3-204 P9-21/O	12 6			 .22	.18 .23	NO NO		28 41	
A 57R			P3-304 P9-21/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 58	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 58A	17		SHLD A58 P3-403	 12				.25 .18	NO NO		 28	
A 58B	14		P9-23/I SHLD A58	6				.21 .25	NO NO		40, 51, 35	
A 58L			P3-503 P9-22/O	12 6			 .22	.18 .23	NO NO		28 41	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE

REV LTR ~~B~~ C

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 58R			P3-603 P9-22/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 59	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 59A	17		SHLD A59 P3-103	 12				.25 .18	NO NO		 28	
A 59B	14		P9-23/O SHLD A59	6				.23 .25	NO NO		41, 33	
A 59L			P3-203 P9-24/O	12 6			 .22	.18 .23	NO NO		28 41	
A 59R			P3-303 P9-24/I	12 6				.16 .21	NO NO		28 40, 51, 35	
A 60	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 60A	17		SHLD A60 P3-402	 12				.25 .18	NO NO		 28	
A 60B	14		P9-26/I SHLD A60	6				.21 .25	NO NO		40, 51, 35	
A 60L			P3-502 P9-25/O	12 6			 .22	.18 .23	NO NO		28 41	
A 60R			P3-602 P9-25/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 61	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE

REV LTR ~~B~~ C

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CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61A	17		SHLD A61 P3-102	 12				.25 .18	NO NO		 28	
A 61B	14		P9-26/0 SHLD A61	6				.23 .25	NO NO		41, 33	
A 61L			P3-202 P9-27/0	12 6			 .22	.18 .23	NO NO		28 41	
A 61R			P3-302 P9-27/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 62	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 62A	17		SHLD A62 P3-401	 12				.25 .18	NO NO		 28	
A 62B	14		P9-29/I SHLD A62	6				.21 .25	NO NO		40, 51, 35	
A 62L			P3-501 P9-28/0	12 6			 .22	.18 .23	NO NO		28 41	
A 62R			P3-601 P9-28/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 63	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 63A	17		SHLD A63 P3-101	 12				.25 .18	NO NO		 28	
A 63B	14		P9-29/0 SHLD A63	6				.23 .25	NO NO		41, 33	

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HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~C
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CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63L			P3-201 P9-30/0	12 6			 .22	.18 .23	NO NO		28 41	
A 63R			P3-301 P9-30/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 64	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 64A	17		SHLD A64 P3-649	 12				.25 .18	NO NO		 28	SEE NOTE 20 SEE NOTE 20
A 64B	17		P5-12 SHLD A64	4				.15 .25	NO NO		30	
A 64L			P3-549 P5-11	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 64R			P3-449 P5-10	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 65	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 65A	17		SHLD A65 E4	 22				.25 .38	NO NO			
A 65B	17		P6-18 SHLD A65	5				.15 .25	NO NO		29	
A 65L			P3-215 P6-36	12 5				.18 .15	NO NO		28 29	
A 65R			P3-115 P6-19	12 5				.18 .15	NO NO		28 29	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~C
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CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 66	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 66A	17		SHLD A66 E4	 22				.25 .38	NO NO			
A 66B	17		P6-15 SHLD A66	5				.15 .25	NO NO		29	
A 66L			P3-415 P6-31	12 5				.18 .15	NO NO		28 29	
A 66R			P3-315 P6-30	12 5				.18 .15	NO NO		28 29	
A 67	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 67A	17		SHLD A67 E4	 22				.25 .38	NO NO			
A 67B	17		P5-1 SHLD A67	5				.15 .25	NO NO		29	
A 67L			P3-615 P6-5	12 5				.18 .15	NO NO		28 29	
A 67R			P3-515 P6-4	12 5				.18 .15	NO NO		28 29	
A 68	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 68A	17		SHLD A68 E4	 22				.25 .38	NO NO			

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HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~C
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CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 68B	17		P6-26 SHLD A68	5				.15 .25	NO NO		29	
A 68L			P3-216 P6-11	12 5				.18 .15	NO NO		28 29	
A 68R			P3-116 P6-25	12 5				.18 .15	NO NO		28 29	
A 69	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 69A	17		SHLD A69 E4	 22				.25 .38	NO NO			
A 69B	17		P6-16 SHLD A69	5				.15 .25	NO NO		29	
A 69L			P3-416 P6-33	12 5				.18 .15	NO NO		28 29	
A 69R			P3-316 P6-17	12 5				.18 .15	NO NO		28 29	
A 70	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 70A	17		SHLD A70 E4	 22				.25 .38	NO NO			
A 70B	17		P6-13 SHLD A70	5				.15 .25	NO NO		29	
A 70L			P3-616 P6-28	12 5				.18 .15	NO NO		28 29	

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HOUSTON, TEXAS
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6900044
SCALE - NONE
REV LTR ~~B~~C
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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 70R			P3-516 P6-27	12 5				.18 .15	NO NO		28 29	
A 71	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 71A	17		SHLD A71 E4	 22				.25 .38	NO NO			
A 71B	17		P6-9 SHLD A71	5				.15 .25	NO NO		29	
A 71L			P3-217 P6-23	12 5				.18 .15	NO NO		28 29	
A 71R			P3-117 P6-22	12 5				.18 .15	NO NO		28 29	
A 72	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 72A	17		SHLD A72 P7-17	 8				.25 .15	NO NO		 30	
A 72B	17		P13-17 SHLD A72	1				.15 .25	NO NO		30	
A 72L			P7-33 P13-33	8 1				.15 .15	NO NO		30 30	
A 72R			P7-16 P13-16	8 1				.15 .15	NO NO		30 30	
A 73	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73A	17		SHLD A73 P7-9	 8				.25 .15	NO NO		 30	
A 73B	17		P13-9 SHLD A73	1				.15 .25	NO NO		30	
A 73L			P7-21 P13-21	8 1				.15 .15	NO NO		30 30	
A 73R			P7-22 P13-22	8 1				.15 .15	NO NO		30 30	
A 74	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 74A	17		SHLD A74 P7-24	 8				.25 .15	NO NO		 30	
A 74B	17		P13-24 SHLD A74	1				.15 .25	NO NO		30	
A 74L			P7-23 P13-23	8 1				.15 .15	NO NO		30 30	
A 74R			P7-10 P13-10	8 1				.15 .15	NO NO		30 30	
A 75	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 75A	17		SHLD A75 P7-26	 8				.25 .15	NO NO		 30	
A 75B	17		P13-26 SHLD A75	1				.15 .25	NO NO		30	

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HOUSTON, TEXAS
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SCALE - NONE
REV LTR XC
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CABLE ASSEMBLY W133 6900044 XC

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75L			P7-25 P13-25	8 1				.15 .15	NO NO		30 30	
A 75R			P7-11 P13-11	8 1				.15 .15	NO NO		30 30	
A 76	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 76A	17		SHLD A76 P7-13	 8				.25 .15	NO NO		 30	
A 76B			P13-13 SHLD A76	1				.15 .25	NO NO		30	
A 76L			P7-27 P13-27	8 1				.15 .15	NO NO		30 30	
A 76R			P7-12 P13-12	8 1				.15 .15	NO NO		30 30	
A 77	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 77A	17		SHLD A77 P7-30	 8				.25 .15	NO NO		 30	
A 77B	17		P13-30 SHLD A77	1				.15 .25	NO NO		30	
A 77L			P7-29 P13-29	8 1				.15 .15	NO NO		30 30	
A 77R			P7-14 P13-14	8 1				.15 .15	NO NO		30 30	

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6900044
SCALE - NONE
REV LTR XC
SHEET 37 OF 71

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 78	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	
A 78A	17		SHLD A78 P7-32	 8				.25 .15	NO NO		 30	
A 78B	17		P13-32 SHLD A78	1				.15 .25	NO NO		30	
A 78L			P7-31 P13-31	8 1				.15 .15	NO NO		30 30	
A 78R			P7-15 P13-15	8 1				.15 .15	NO NO		30 30	
A 79	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 79A	14		SHLD A79 P8-25/I	 7				.25 .21	NO NO		 32, 34, 35	
A 79B	17		P13-38 SHLD A79	1				.15 .25	NO NO		30	
A 79L			P8-24/0 P13-62	7 1			.32	.23 .15	NO NO		31 30	
A 79R			P8-24/I P13-63	7 1				.21 .15	NO NO		32, 34, 35 30	
A 80	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 80L			P11-30 P13-56	9 1				.15 .15	NO NO		29 30	

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HOUSTON, TEXAS
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6900044
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REV LTR XC
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CABLE ASSEMBLY W133 6900044 ~~B~~C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 80R			P11-29 P13-81	9 1				.15 .15	NO NO		29 30	
A 81	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 81L			P11-2 P13-1	9 1				.15 .15	NO NO		29 30	
A 81R			P11-1 P13-2	9 1				.15 .15	NO NO		29 30	
A 82	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 82L			P11-4 P13-4	9 1				.15 .15	NO NO		29 30	
A 82R			P11-3 P13-3	9 1				.15 .15	NO NO		29 30	
A 83	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 83L			P11-6 P13-6	9 1				.15 .15	NO NO		29 30	
A 83R			P11-5 P13-5	9 1				.15 .15	NO NO		29 30	
A 84	15				2.80 2.80	2.50 2.50				A,6B A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 84A	17		SHLD A84 P7-36	 8				.25 .15	NO NO		 30	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 84B	17		P13-36 SHLD A84	1				.15 .25	NO NO		30	
A 84L			P7-35 P13-35	8 1				.15 .15	NO NO		30 30	
A 84R			P7-18 P13-18	8 1				.15 .15	NO NO		30 30	
A 85	15				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 85A	17		SHLD A85 P7-20	 8				.25 .15	NO NO		 30	
A 85B	17		P13-20 SHLD A85	1				.15 .25	NO NO		30	
A 85L			P7-37 P13-37	8 1				.15 .15	NO NO		30 30	
A 85R			P7-19 P13-19	8 1				.15 .15	NO NO		30 30	
A 86	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 86L			P11-38 P13-61	9 1				.15 .15	NO NO		29 30	
A 86R			P11-37 P13-85	9 1				.15 .15	NO NO		29 30	
A 87	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87L			P11-40 P13-59	9 1				.15 .15	NO NO		29 30	
A 87R			P11-39 P13-84	9 1				.15 .15	NO NO		29 30	
A 88	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 88L			P11-42 P13-58	9 1				.15 .15	NO NO		29 30	
A 88R			P11-41 P13-82	9 1				.15 .15	NO NO		29 30	
A 89	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 89A	14		SHLD A89 P8-11/I	 7				.25 .21	NO NO		 32, 34, 35	
A 89B	17		P13-42 SHLD A89	1				.15 .25	NO NO		30	
A 89L			P8-10/O P13-66	7 1			.32	.23 .15	NO NO		31 30	
A 89R			P8-10/I P13-41	7 1				.21 .15	NO NO		32, 34, 35 30	
A 90	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 90A	14		SHLD A90 P8-8/O	 7				.25 .23	NO NO		 31, 33	

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REV LTR ~~B~~C
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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 90B	17		P13-71 SHLD A90	1				.15 .25	NO NO		30	
A 90L			P8-9/O P13-70	7 1			.32	.23 .15	NO NO		31 30	
A 90R			P8-9/I P13-46	7 1				.21 .15	NO NO		32, 34, 35 30	
A 91	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 91A	14		SHLD A91 P8-8/I	 7				.25 .21	NO NO		 32, 34, 35	
A 91B	17		P13-47 SHLD A91	1				.15 .25	NO NO		30	
A 91L			P8-7/O P13-48	7 1			.32	.23 .15	NO NO		31 30	
A 91R			P8-7/I P13-72	7 1				.21 .15	NO NO		32, 34, 35 30	
A 92	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 92A	14		SHLD A92 P8-5/O	 7				.25 .23	NO NO		 31, 33	
A 92B	17		P13-80 SHLD A92	1				.15 .25	NO NO		30	
A 92L			P8-6/O P13-79	7 1			.32	.23 .15	NO NO		31 30	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 92R			P8-6/I P13-55	7 1				.21 .15	NO NO		32, 34, 35 30	
A 93	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 93A	14		SHLD A93 P8-5/I	 7				.25 .21	NO NO		 32, 34, 35	
A 93B	17		P13-40 SHLD A93	1				.15 .25	NO NO		30	
A 93L			P8-4/0 P13-65	7 1			.32	.23 .15	NO NO		31 30	
A 93R			P8-4/I P13-64	7 1				.21 .15	NO NO		32, 34, 35 30	
A 94	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 94A	14		SHLD A94 P8-2/0	 7				.25 .23	NO NO		 31, 33	
A 94B	17		P13-52 SHLD A94	1				.15 .25	NO NO		30	
A 94L			P8-3/0 P13-76	7 1			.32	.23 .15	NO NO		31 30	
A 94R			P8-3/I P13-77	7 1				.21 .15	NO NO		32, 34, 35 30	
A 95	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9

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CABLE ASSEMBLY W133 6900044 XC

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95A	14		SHLD A95 P8-2/I	 7				.25 .21	NO NO		 32, 34, 35	
A 95B	17		P13-54 SHLD A95	1				.15 .25	NO NO		30	
A 95L			P8-1/0 P13-78	7 1			.32	.23 .15	NO NO		31 30	
A 95R			P8-1/I P13-53	7 1				.21 .15	NO NO		32, 34, 35 30	
A 96	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 96A	14		SHLD A96 P8-11/0	 7				.25 .23	NO NO		 31, 33	
A 96B	17		P13-68 SHLD A96	1				.15 .25	NO NO		30	
A 96L			P8-12/0 P13-67	7 1			.32	.23 .15	NO NO		31 30	
A 96R			P8-12/I P13-43	7 1				.21 .15	NO NO		32, 34, 35 30	
A 97	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 97A	17		SHLD A97 P8-14	 7				.25 .18	NO NO		 38	
A 97B	17		P13-45 SHLD A97	1				.15 .25	NO NO		30	

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CABLE ASSEMBLY W133 6900044 XC

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97L			P8-13/0 P13-69	7 1			.32	.23 .15	NO NO		31 30	
A 97R			P8-13/I P13-44	7 1				.21 .15	NO NO		32, 34, 35 30	
A 98	14		P2-G19 P8-42/I	15 7				.18 .21	NO NO		28 32, 33	
A 99	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 99L			P2-A25 P4-23/0	15 2			 .32	.18 .23	NO NO		28 31, 33	
A 99R			P2-A24 P4-23/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20, 33	
A 100L			P2-K30 P4-26/I	15 2				.16 .21	NO NO		28 32, 34, 35	
A 100R			P2-K31 P4-26/0	15 2			 .32	.18 .23	NO NO		28 31	
A 102	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 102L			P2-K7 P1-30	15 3				.18 .18	NO NO		28 38	
A 102R			P2-K6 P1-29	15 3				.18 .18	NO NO		28 38	

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CABLE ASSEMBLY W133 6900044 XC

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 103L			P2-D7 P1-23	15 3				.18 .18	NO NO		28 38	
A 103R			P2-D6 P1-22	15 3				.18 .16	NO NO		28 38	
A 104	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 104L			P2-C7 P1-19	15 3				.18 .18	NO NO		28 38	
A 104R			P2-C6 P1-18	15 3				.18 .18	NO NO		28 38	
A 105	17		P2-F8 P1-24	15 3				.18 .18	NO NO		28 38	
A 107	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 107L			E11 P1-28	14 3				.38 .18	NO NO		 38	
A 107R			E13 P1-27	16 3				.38 .18	NO NO		 38	
A 108	16				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 108L			P2-G12 P1-33	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 108R			P2-D12 P1-32	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 108Y			P2-F12 P1-34	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 109	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 109L			P2-B14 P1-38	15 3				.18 .18	NO NO		28 38	
A 109R			P2-A14 P1-37	15 3				.18 .18	NO NO		28 38	
A 110	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 110L			P2-K13 P1-42	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 110R			P2-H13 P1-41	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 112	15				2.30 5.30	2.00 5.00				B,7 B,7	20 20	
A 112L			P11-35 P2-K14	9 15				.15 .18	NO NO		29 28	
A 112R			P11-34 P2-H14	9 15				.15 .18	NO NO		29 28	
A 114	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	

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SCALE - NONE	REV LTR	~~B~~ C	SHEET 47 OF 71

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 114A	17		SHLD A114 E1	 21				.25 .25	NO NO			
A 114W			P12-2/I P3-620	18 12				.21 .18	NO NO		35, 40, 51 28	
A 115	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	
A 115A	17		SHLD A115 E1	 21				.25 .25	NO NO			
A 115W			P12-9/I P3-121	18 12				.21 .18	NO NO		35, 40, 51 28	
A 116	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 116A	17		SHLD A116 E1	 21				.25 .25	NO NO			
A 116W			P12-3/I P3-221	18 12				.21 .18	NO NO		35, 40, 51 28	
A 117	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 117A	17		SHLD A117 E1	 21				.25 .25	NO NO			
A 117W			P12-10/I P3-321	18 12				.21 .18	NO NO		35, 40, 51 28	
A 118	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 118A	17		SHLD A118 E1	 21				.25 .25	NO NO			
A 118W			P12-3/0 P3-421	18 12			.22	.23 .18	NO NO		41 28	
A 119	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 119A	17		SHLD A119 E1	 21					NO NO			
A 119W			P12-10/0 P3-521	18 12			.22	.23 .18	NO NO		41 28	
A 120	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 120A	17		SHLD A120 E2	 19				.25 .25	NO NO			
A 120W			P12-1/0 P3-621	18 12				.23 .18	NO NO		41 28	
A 121	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 121A	17		SHLD A121 E2	 19				.25 .25	NO NO			
A 121W			P12-11/I P3-122	18 12				.21 .18	NO NO		35, 40, 51 28	
A 122	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 122A	17		SHLD A122 E2	 19				.25 .25	NO NO			
A 122W			P12-1/I P3-222	18 12				.21 .18	NO NO		35, 40, 51 28	
A 123	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 123A	17		SHLD A123 E2	 19				.25 .25	NO NO			
A 123W			P12-11/0 P3-322	18 12				.23 .18	NO NO		41 28	
A 124	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 124L			P2-B26 P4-19/0	15 2			 .32	.18 .23	NO NO		28 31	
A 124R			P2-A26 P4-19/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 125	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 125L			P2-B28 P4-20/0	15 2			 .32	.18 .23	NO NO		28 31	
A 125R			P2-A28 P4-20/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 126	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	

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SCALE - NONE	REV LTR	~~B~~ C	SHEET 50 OF 71

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CABLE ASSEMBLY W133 6900044 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126L			P2-B30	15				.18	NO		28	
			P4-21/O	2			.32	.23	NO		31	
A 126R			P2-A30	15				.18	NO		28	
			P4-21/I	2				.21	NO		32, 34, 35	
A 127	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 127L			P11-32	9				.15	NO		29	
			P2-B15	15				.18	NO		28	
A 127R			P11-31	9				.15	NO		29	
			P2-A15	15				.18	NO		28	
A 128	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 128L			P2-A21	15				.18	NO		28	
			P3-338	12				.18	NO		28	
A 128R			P2-B21	15				.18	NO		28	
			P3-238	12				.18	NO		28	
A 129	17		P2-B17	15				.18	NO		28	
			P3-138	12				.18	NO		28	
A 130	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	
A 130L			P2-K28	15				.18	NO		28	
			P4-25/O	2			.32	.23	NO		31	
A 130R			P2-K29	15				.18	NO		28	
			P4-25/I	2				.21	NO		32, 34, 35	

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CABLE ASSEMBLY W133 6900044 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 131	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 131L			P2-G5	15				.18	NO		28	
			E11	14				.38	NO			
A 131R			P2-G4	15				.18	NO		28	
			E10	13				.38	NO			
A 132			DELETED									
A 132L			DELETED									
A 132R			DELETED									
A 134	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 134A	17		SHLD A134					.25	NO			
			P2-G23	15				.18	NO		28	
A 134B	14		P8-25/O	7				.23	NO		31, 33	
			SHLD A134					.25	NO			
A 134L			P2-K23	15				.18	NO		28	
			P8-26/O	7			.32	.23	NO		31	
A 134R			P2-H23	15				.18	NO		28	
			P8-26/I	7				.21	NO		32, 34, 35	
A 135	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 135A	17		SHLD A135					.25	NO			
			P2-G24	15				.18	NO		28	
A 135B	14		P8-16/I	7				.21	NO		32, 34, 35	
			SHLD A135					.25	NO			
A 135L			P2-K24	15				.18	NO		28	
			P8-15/O	7			.32	.23	NO		31	
A 135R			P2-H24	15				.18	NO		28	
			P8-15/I	7				.21	NO		32, 34, 35	
A 136	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 136A	17		SHLD A136					.25	NO			
			P2-G25	15				.18	NO		28	
A 136B	14		P8-16/O	7				.23	NO		31, 33	
			SHLD A136					.25	NO			
A 136L			P2-K25	15				.18	NO		28	
			P8-17/O	7			.32	.23	NO		31	
A 136R			P2-H25	15				.18	NO		28	
			P8-17/I	7				.21	NO		32, 34, 35	
A 137	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 137A	17		SHLD A137					.25	NO			
			P2-G21	15				.18	NO		28	
A 137B	14		P8-19/I	7				.21	NO		32, 34, 35	
			SHLD A137					.25	NO			

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CABLE ASSEMBLY W133 6900044 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 137L			P2-K21	15				.18	NO		28	
			P8-18/O	7			.32	.23	NO		31	
A 137R			P2-H21	15				.18	NO		28	
			P8-18/I	7				.21	NO		32, 34, 35	
A 139	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 139A	17		SHLD A139					.25	NO			
			P2-G22	15				.18	NO		28	
A 139B	14		P8-19/O	7				.23	NO		31, 33	
			SHLD A139					.25	NO			
A 139L			P2-K22	15				.18	NO		28	
			P8-20/O	7			.32	.23	NO		31	
A 139R			P2-H22	15				.18	NO		28	
			P8-20/I	7				.21	NO		32, 34, 35	
A 141	14		P12-4/I	18				.21	NO		40, 51, 35	
			P2-F9	15				.18	NO		28	
A 142	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 142L			P11-12	9				.15	NO		29	
			P2-D1	15				.18	NO		28	
A 142R			P11-11	9				.15	NO		29	
			P2-D2	15				.18	NO		28	
A 144	27				3.30	3.00				A,6A	33, 19, 20	
					5.30	5.00				B,7	20	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 144A	17		SHLD A144 E2	 19				.25 .25	NO NO			
A 144L			P12-16/O P2-G28	18 15			.22	.23 .18	NO NO		41 28	
A 144R			P12-16/I P2-G31	18 15				.21 .18	NO NO		35, 40, 51 28	
A 145	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 20 20	SEE NOTE 9
A 145A	17		SHLD A145 E2	 19				.25 .25	NO NO			
A 145W			P12-15/O P2-G30	18 15				.23 .18	NO NO		41 28	
A 147	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 147A	17		SHLD A147 E2	 19				.25 .25	NO NO			
A 147W			P12-15/I P2-G29	18 15				.21 .18	NO NO		35, 40, 51 28	
A 154	27				2.80 2.80	2.50 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 154B	17		P3-347 SHLD A154	12				.18 .25	NO NO			SEE NOTE 20
A 154L			P14-34/O P3-247	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154R			P14-34/I P3-147	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 155	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 155B	17		P3-647 SHLD A155	12				.18 .25	NO NO			SEE NOTE 20
A 155L			P14-35/O P3-547	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 155R			P14-35/I P3-447	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 156	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 156B	17		P3-349 SHLD A156	12				.18 .25	NO NO			SEE NOTE 20
A 156L			P14-32/O P3-249	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 156R			P14-32/I P3-149	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 157	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 157B	17		P3-649 SHLD A157	12				.18 .25	NO NO			SEE NOTE 20
A 157L			P14-33/O P3-549	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 157R			P14-33/I P3-449	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 158	14		P12-2/O P3-119	18 12				.23 .18	NO NO		41, 33 28	
A 159	14		P12-9/O P3-422	18 12				.23 .18	NO NO		41, 33 28	
A 164	27				2.80 2.80	2.50 2.50				B,7 B,7	20, 33 20	
A 164L			P14-31/O P13-8	17 1			.22	.23 .15	NO NO		41 30	
A 164R			P14-31/I P13-7	17 1				.21 .15	NO NO		40, 51, 35 30	
A 165	27				2.80 5.30	2.50 5.00				B,7 B,7	20, 33 20	
A 165L			P12-46/O P2-A23	18 15			.22	.23 .18	NO NO		41 28	
A 165R			P12-46/I P2-B23	18 15				.21 .18	NO NO		40, 51, 35 26	
A 171	44				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 171L			P12-4/O P2-G9	18 15			.22	.23 .18	NO NO		41, 33 28	 SEE NOTE 20
A 171R			P12-33/O P2-G8	18 15			.22	.23 .18	NO NO		41, 33 28	 SEE NOTE 20

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CABLE ASSEMBLY W133 6900044 ~~B~~ C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 171Y			P12-33/I E13	18 16				.21 .38	NO NO		40, 51, 35	
A 178	15				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 178L			P11-14 P2-C1	9 15				.15 .18	NO NO		29 28	
A 178R			P11-13 P2-C2	9 15				.15 .18	NO NO		29 28	
A 284	14		P2-A22 P8-41/I	15 7				.18 .21	NO NO		28 32, 34, 35	 SEE NOTE 24
A 344	16				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 344L			P2-F14 P1-46	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 344R			P2-G14 P1-45	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 344Y			P2-D14 P1-44	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 345	15				3.30 3.30	3.00 3.00				B,7 B,7	20 20	
A 345L			E11 P1-26	14 3				.38 .18	NO NO		 38	
A 345R			E13 P1-25	16 3				.38 .18	NO NO		 38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 346	15				3.80	3.50				8,7	20	
					3.80	3.50				8,7	20	
A 346L			E11	14				.38	NO			
			P1-26	3				.18	NO		38	
A 346R			E13	16				.38	NO			
			P1-25	3				.18	NO		38	
A 347	15				3.80	3.50				8,7	20	
					3.80	3.50				8,7	20	
A 347L			E11	14				.38	NO			
			P1-28	3				.18	NO		38	
A 347R			E13	16				.38	NO			
			P1-27	3				.18	NO		38	
A 348			P2-A8	15				.18	NO		28	
			E13	16				.38	NO			
A 348L			DELETED									
A 348R			DELETED									
A 349	15				5.30	5.00				8,7	20	
					3.80	3.50				8,7	20	
A 349L			P2-G7	15				.18	NO		28	
			P1-19	3				.18	NO		38	
A 349R			P2-G6	15				.18	NO		28	
			P1-18	3				.18	NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 350	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 350L			P2-B7	15				.18	NO		28	
			P1-23	3				.18	NO		38	
A 350R			P2-B6	15				.18	NO		28	
			P1-22	3				.18	NO		38	
A 351	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 351L			P2-F7	15				.18	NO		28	
			P1-21	3				.18	NO		38	
A 351R			P2-F6	15				.18	NO		28	
			P1-20	3				.18	NO		38	
A 352	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 352L			P2-A7	15				.18	NO		28	
			P1-21	3				.18	NO		38	
A 352R			P2-A6	15				.18	NO		28	
			P1-20	3				.18	NO		38	
A 353	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 353L			P2-A5	15				.18	NO		28	
			E11	14				.38	NO			
A 353R			P2-A4	15				.18	NO		28	
			E10	13				.38	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 354	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 354L			P2-B5	15				.18	NO		28	
			E11	14				.38	NO			
A 354R			P2-B4	15				.18	NO		28	
			E10	13				.38	NO			
A 355	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 355L			P2-C5	15				.18	NO		28	
			E11	14				.38	NO			
A 355R			P2-C4	15				.18	NO		28	
			E10	13				.38	NO			
A 356	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 356L			P2-D5	15				.18	NO		28	
			E11	14				.38	NO			
A 356R			P2-D4	15				.18	NO		28	
			E10	13				.38	NO			
A 357	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 357L			P2-F5	15				.18	NO		28	
			E11	14				.38	NO			
A 357R			P2-F4	15				.18	NO		28	
			E10	13				.38	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 358	15				5.30	5.00				A,6B	19, 20	
					2.60	2.30				A,6B	19, 20	
A 358A	17		SHLD A358					.25	NO			
			E4					.38	NO			
A 358B	17		P5-42	4				.15	NO		30	
			SHLD A358					.25	NO			
A 358L			P3-337	12				.18	NO		28	
			P5-41	4				.15	NO		30	
A 358R			P3-237	12				.18	NO		28	
			P5-40	4				.15	NO		30	
A 359	15				5.30	5.00				A,6B	19, 20	
					2.60	2.30				A,6B	19, 20	
A 359A	17		SHLD A359					.25	NO			
			E4					.38	NO			
A 359B	17		P5-45	4				.15	NO		30	
			SHLD A359					.25	NO			
A 359L			P3-537	12				.18	NO		28	
			P5-44	4				.15	NO		30	
A 359R			P3-437	12				.18	NO		28	
			P5-43	4				.15	NO		30	
A 360	14		P3-611	12				.18	NO		28	
			P9-33/0	6				.23	NO		41, 33	
A 361	15				5.30	5.00				B,7	20	
					2.60	2.30				B,7	20	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 361L			P2-K15 P5-83	15 4				.18 .15	NO NO		28 30	
A 361R			P2-H15 P5-82	15 4				.18 .15	NO NO		28 30	
A 365	14		P12-31/I P1-12	18 3				.21 .18	NO NO		40, 51, 35 38	
A 366	17		P3-236 E12	12 11				.18 .38	NO NO		28	
A 367	17		P3-436 L12	12 11				.18 .38	NO NO		28	
A 385	53				3.80 3.80	3.50 3.50				B,7 B,7	59 59	
A 385L			P10-B E11	10 14				.28 .38	YES NO			
A 385R			P10-A E10	10 13				.28 .38	YES NO			
A 387	18		P10-H E13	10 16				.28 .38	YES NO			
A 397	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 397L			P2-K12 P1-42	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 397R			P2-H12 P1-41	15 3				.18 .18	NO NO		28	SEE NOTE 20

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 398	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 398L			P2-F11 P1-34	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 398R			P2-D11 P1-32	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 398Y			P2-G11 P1-33	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 399L			P2-F13 P1-46	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399R			P2-D13 P1-44	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399Y			P2-G13 P1-45	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 417	14		P12-31/O P1-13	18 3			.22	.23 .18	NO NO		41, 33 38	
A 420	14		P2-G20 P8-44/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 421	14		P2-H20 P8-44/O	15 7				.18 .23	NO NO		28 31, 33	
A 424	17		P2-G18 P4-22	15 2				.18 .18	NO NO		28 38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 426	18		P10-M E12	10 11				.28 .38	YES NO			
A 442	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 442B	17		P3-646 SHLD A442	12				.18 .25	NO NO			SEE NOTE 20
A 442L			P12-24/O P3-546	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 442R			P12-24/I P3-446	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 443	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 443B	17		P3-348 SHLD A443	12				.18 .25	NO NO			SEE NOTE 20
A 443L			P12-25/O P3-248	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 443R			P12-25/I P3-148	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 444	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 444B	17		P3-648 SHLD A444	12				.18 .25	NO NO			SEE NOTE 20
A 444L			P12-26/O P3-548	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 444R			P12-26/I P3-448	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 445	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 445B	17		P3-346 SHLD A445	12				.18 .25	NO NO			SEE NOTE 20
A 445L			P12-23/O P3-246	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 445R			P12-23/I P3-146	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 446	18		P10-E E10	10 13				.28 .38	YES NO			
A 449	18		P10-G E11	10 14				.28 .38	YES NO			
A 450	18		P10-N E11	10 14				.28 .38	YES NO			
A 453	18		P10-U P10-C*	10 10				.28 .28	YES YES			
A 454	18		P10-F E13	10 16				.28 .38	YES NO			
A 455	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 455A	17		SHLD A455 E4	 22				.25 .38	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 455B	17		P5-27	4				.15	NO		30	
			SHLD A455					.25	NO			
A 455L			P3-233	12				.18	NO		28	
			P5-26	4				.15	NO		30	
A 455R			P3-133	12				.18	NO		28	
			P5-25	4				.15	NO		30	
A 456	15				5.30	5.00				8,7	20	
					2.60	2.30				8,7	20	
A 456L			P2-G16	15				.18	NO		28	
			P5-80	4				.15	NO		30	
A 456R			P2-H16	15				.18	NO		28	
			P5-79	4				.15	NO		30	
A 457	44				5.30	5.00				B,7	20	
					3.30	3.00				B,7	20	
A 457L			P2-G9	15				.18	NO			SEE NOTE 20
			P11-9	9				.15	NO		29	
A 457R			P2-G8	15				.18	NO			SEE NOTE 20
			P11-7	9				.15	NO		29	
A 457Y			E13	16				.38	NO			
			P11-8	9				.15	NO		29	
A 458	18		E1	21				.25	NO			
			E3	20				.25	NO			
A 459	18		E2	19				.25	NO			
			E3	20				.25	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 460	18		E3	20				.25	NO			
			P12-44	18				.25	NO		36	
A 461	17		P9-55	6				.21	NO		37	
			P3-438	12				.18	NO		28	
A 462	17		E4	22				.38	NO			
A 463	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 463L			P11-65	9				.15	NO		29	
			P2-A27	15				.18	NO		28	
A 463R			P11-66	9				.15	NO		29	
			P2-B27	15				.18	NO		28	
A 464	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 464L			P11-67	9				.15	NO		29	
			P2-A29	15				.18	NO		28	
A 464R			P11-68	9				.15	NO		29	
			P2-B29	15				.18	NO		28	
A 465	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 465L			P11-69	9				.15			29	
			P2-A31	15				.18			28	
A 465R			P11-70	9				.15			29	
			P2-B31	15				.18			28	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 466	14		P2-H17	15				.25	NO		28	
			P8-42/0	7				.23	NO		31, 34, 35	
A 467	17		P6-37	5				.15	NO		29	
			P6-38	5				.15	NO		29	
A 468	14		P1-50/I	3				.21	NO		31, 33	
			P1-50/0	3				.23	NO		32, 34, 35	
A 469	14		P9-40/I	6				.21	NO		40, 51, 35	
			P3-522	12				.18	NO		28	
A 470	14		P9-40/0	6				.23	NO		41, 33	
			P3-622	12				.18	NO		28	
A 471	17		P2-K4	15				.18	NO		28	
			E13	16				.38	NO			
A 472	17		P2-C8	15				.18	NO		28	
			P1-15	3				.18	NO		38	
A 473	17		P2-B8	15				.18	NO		28	
			P1-50	3				.18	NO		38	
A 474	27				3.30	3.00				B,7	20, 33	SEE NOTE 9
					5.30	5.00				B,7	20	
A 474L			P12-47/0	18			.22	.23	NO		41	
			P2-F2	15				.18	NO		28	
A 474R			P12-47/I	18				.21	NO		40, 51, 35	
			P2-F1	15				.18	NO		28	

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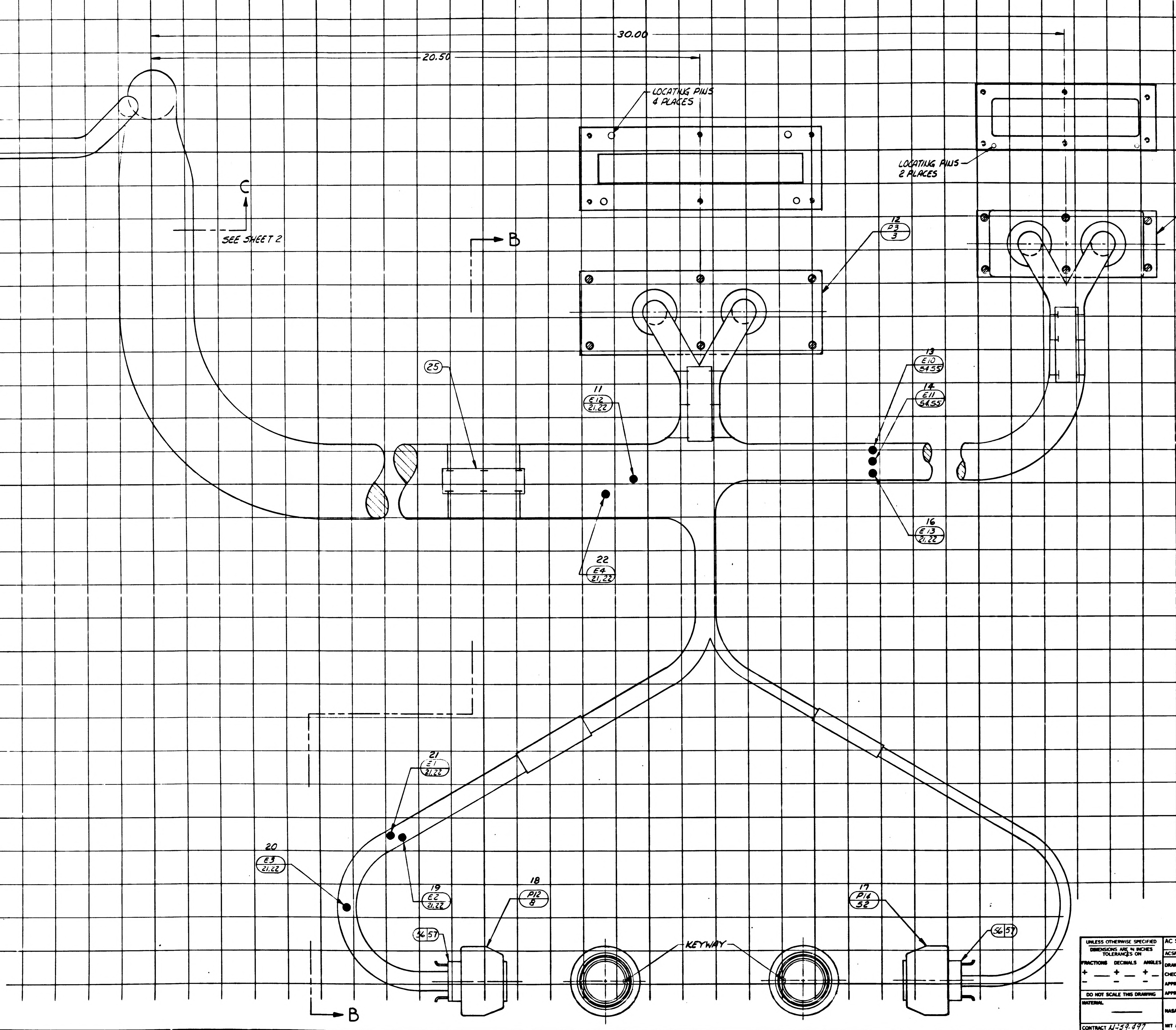
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

SEE SHEET I FOR REVISION RECORD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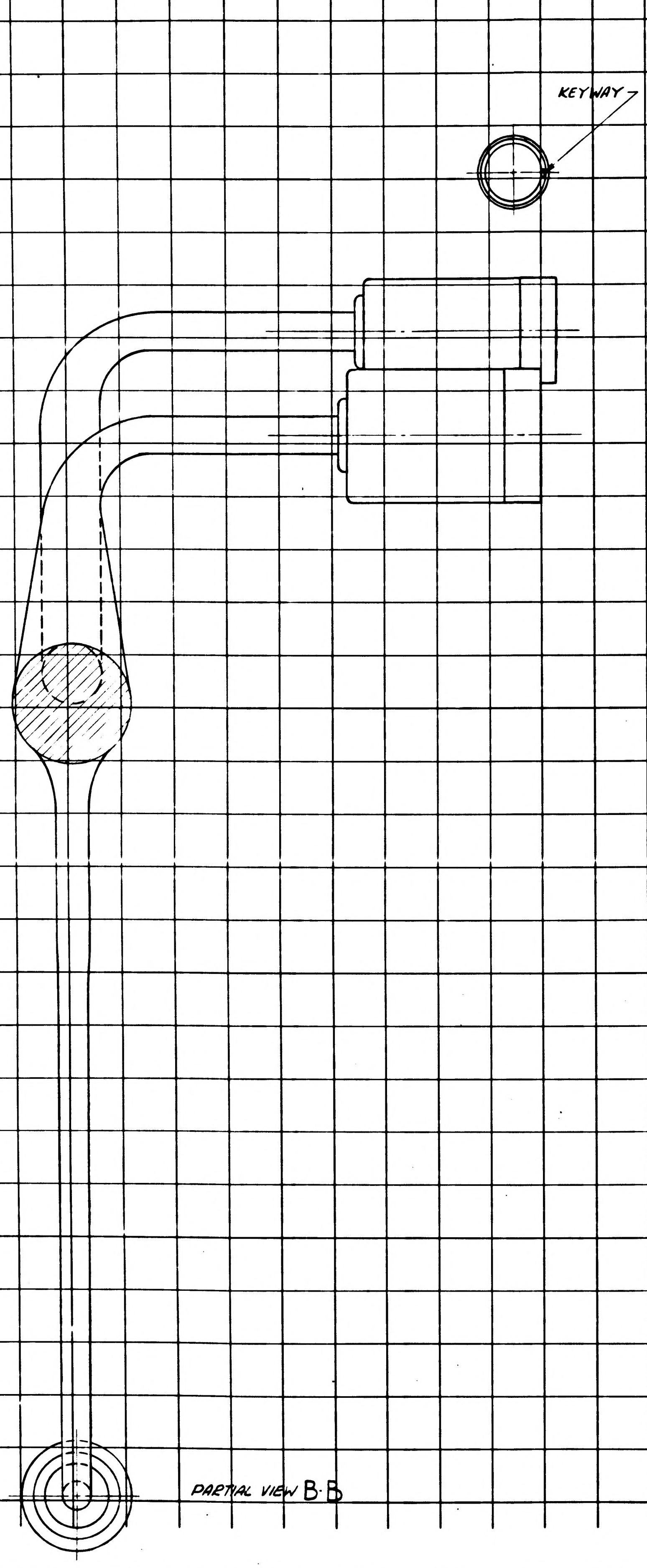
20.50
LOCATING PINS 4 PLACES
LOCATING PINS 2 PLACES
C
SEE SHEET 2
B
15 P2/2
12 P3/3
25
11 E12/21,22
13 E10/54,55
14 E11/54,55
16 E13/21,22
22 E4/21,22
21 E1/21,22
20 E3/21,22
19 E2/21,22
18 P12/8
17 P16/32
56 57
56 57
KEYWAY
B

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ___ ± ___ ± ___	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN DATE 19 AUG 65	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED W133
	CHECKED 10 SEP 65	
	APPROVAL 10 Sep 65	
DO NOT SCALE THIS DRAWING	APPROVAL Coleman 10/27/65	
MATERIAL ———	NASA APPROVAL A. C. METZGER	CODE IDENT NO 99974 | SIZE J2 | 6900044
CONTRACT NAS9-497	MIT APPROVAL 4 Nov 65	SCALE 1:1 | SHEET 70 OF 71

6900044 C

27 6900044


KEYWAY
PARTIAL VIEW B-B

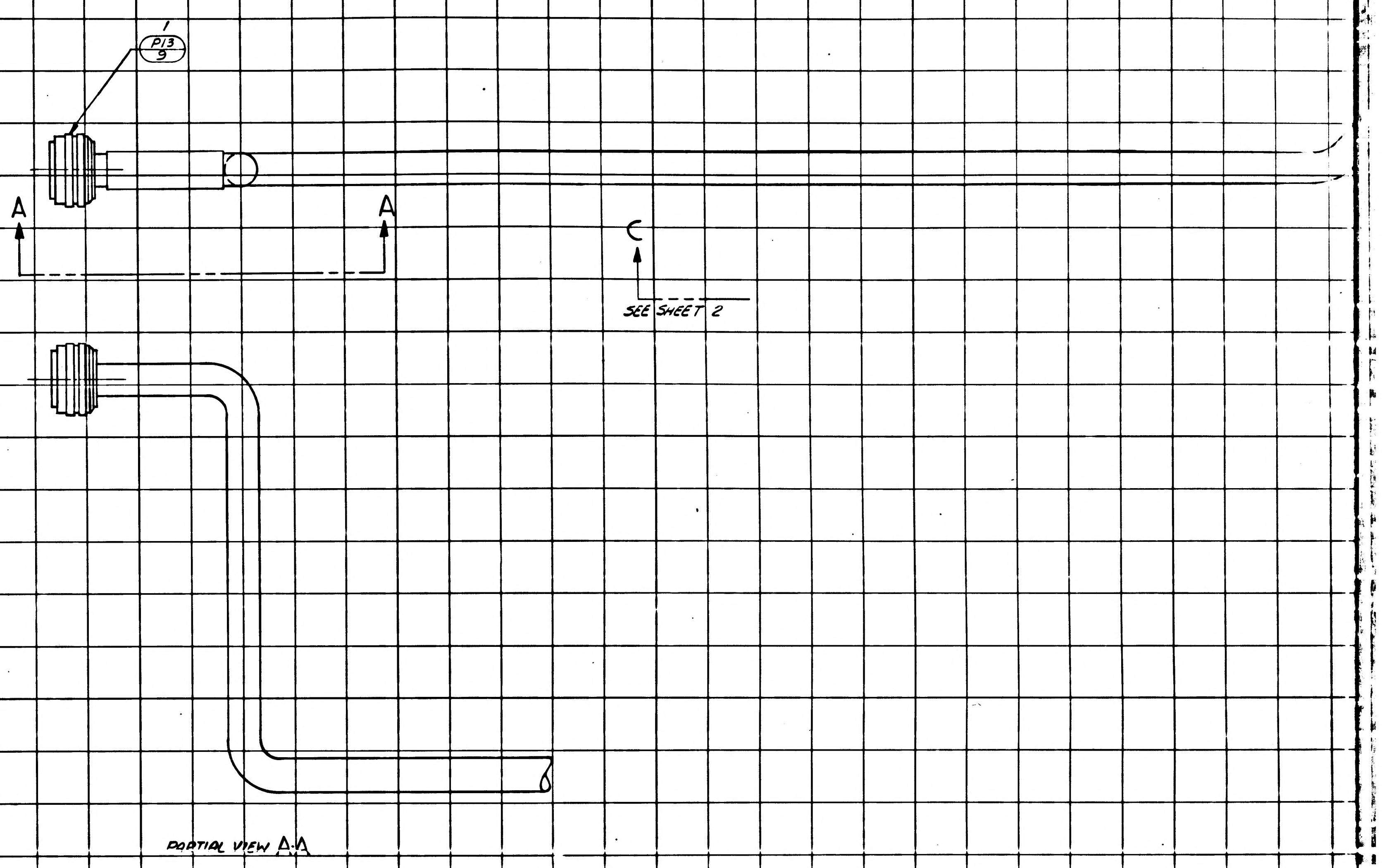

1
P13
9
A
A
C
SEE SHEET 2
PARTIAL VIEW A-A

TABLE I

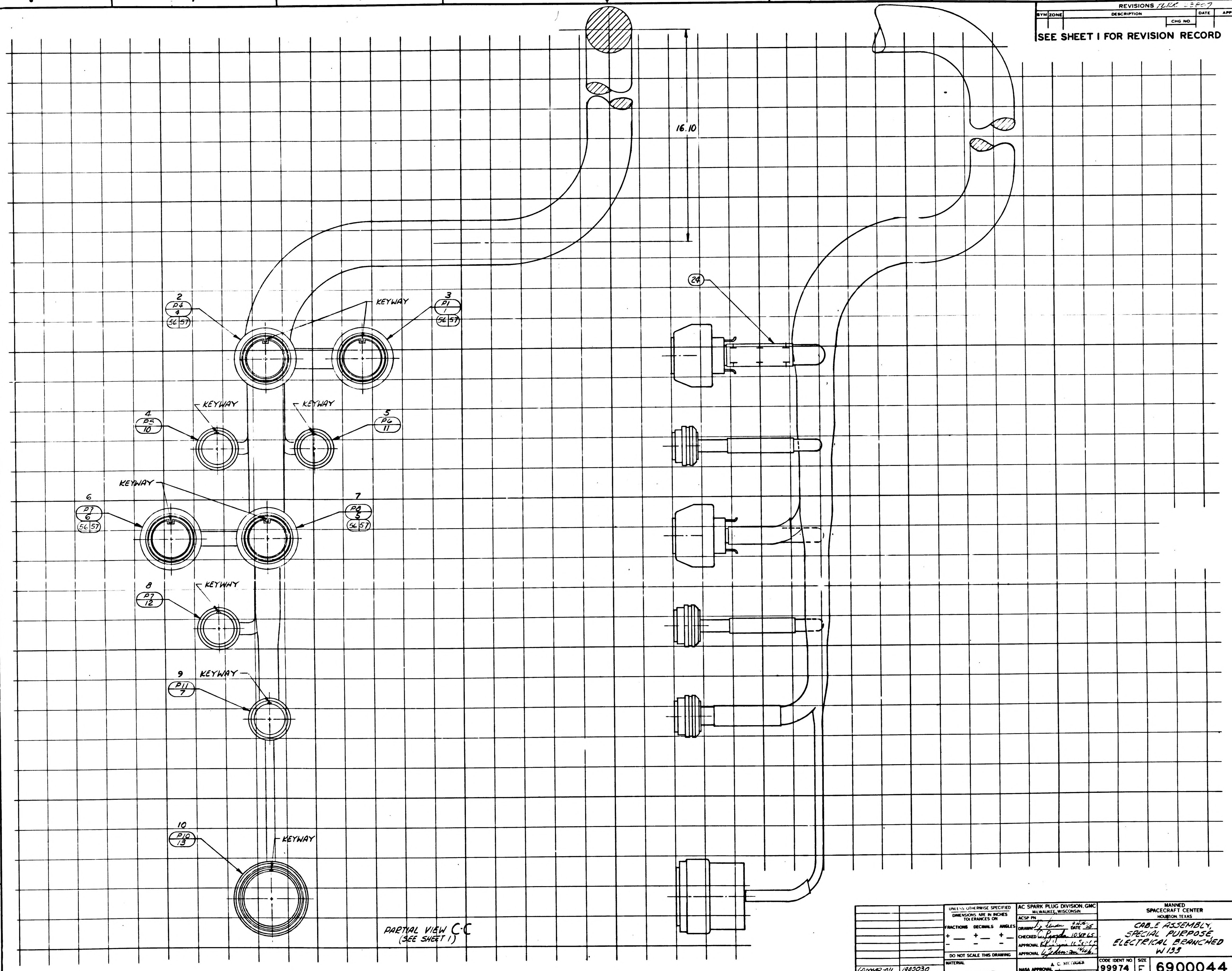
PLUG	TERMINATION MARKING
P1	W133-P1 (J11-GDB)
P2	W133-P2 (PSA)
P3	W133-P3 (CDU)
P4	W133-P4 (J12-GDB)
P5	W133-P5 (J16-GDB)
P6	W133-P6 (J15-GDB)
P7	W133-P7 (J23-GDB)
P8	W133-P8 (J19-GDB)
P9	W133-P9 (J20-GDB)
P10	W133-P10 (J33-GDB)
P11	W133-P11 (J26-GDB)
P12	W133-P12 (J1-TPA #2)
P13	W133-P13 (P13-SMF)
P14	W133-P14 (J2-TPA #2)

6900044 C

REVISIONS TLRC 23807

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD

SEE SHEET 1 FOR REVISION RECORD



16.10
24
2
P4
4
56 57
KEYWAY
3
P1
1
56 57
4
P5
10
KEYWAY
KEYWAY
5
P6
11
KEYWAY
6
P7
6
56 57
7
P8
5
56 57
8
P7
12
KEYWAY
9
P11
7
KEYWAY
10
P10
13
KEYWAY

PARTIAL VIEW C-C
(SEE SHEET 1)

6900043-011	1903030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Liz Linden DATE 9 AUG 65
CHECKED C. Pagoda 10 SEP 65
APPROVAL 10 Sep 65
APPROVAL W. Johnson 14 Oct 65
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL BRANCHED
W 133

CODE IDENT NO. 99974
SIZE E
6900044
SCALE 1:1
SHEET 71 OF 71

6900044 C

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	REPLACES REV(-) WITH CHANGE PER MXC 204908; WAS "C" SIZE WORD DRAWING	17SEP 65	PHG EF
		B	REVISED PER MXC-206061	19 OCT 65	JWP EF
		Ⓜ C	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	KLP CW
		D	REVISED PER TDRR 24142	24 NOV 65	LK MEM

REV	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46

REV STATUS OF SHEETS																							
	REV				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	SHEET				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A.J. FLUDER DATE 19 AUG 65
CHECKED C. PIOJDA 10 SEP 65
APPROVAL R. PIERINI 10 SEP 65
APPROVAL V. Gelman 10/26/65

NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

CONTRACT NAS9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
SPECIAL PURPOSE
BRANCHED ELECTRICAL
W133

CODE IDENT NO. 99974
SIZE A
6900044
REV D

SCALE ——
SHEET 1 OF 72

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	D														
48	D														
49	D														
50	D														
51	D														
52	D														
53	D														
54	D														
55	D														
56	D														
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67	D														
68	D														
69	D														
70	D														
71	D														
72	D														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION D

NASA DRAWING NO
6900044
SHEET 2 OF 72

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	LACE HARNESS USING ITEM 26.
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019.
6	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
7	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.
8	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
9	POSITION IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE
10	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD B - TO END SHIELD L - WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER. W - WHITE Y - WHITE WITH YELLOW TRACER.
11	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 3 OF ~~71~~ 72

NOTE NUMBER	GENERAL NOTES DESCRIPTION
12	ITEMS 50 (13) AND ITEM 29 (85) SUPPLIED WITH ITEM 7. ITEMS 50 (13) AND ITEM 30 (85) SUPPLIED WITH ITEMS 9, 10 AND 12. ITEM 50(9) AND ITEM 29 (61) SUPPLIED WITH ITEM 11.
13	SECURE TO CABLE USING ITEM 26, MARKING TO READ AWAY FROM CONNECTOR. ALIGN CENTER LINE OF BAND AND OF ASSOCIATED CONNECTOR MASTER KEY SLOT TO BE COLINEAR WITHIN + OR -0.25 IN.
14	MARK IDENTIFICATION BANDS AS NOTED IN TABLE 1,.12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE
15	FILL THE SPACE BETWEEN WIRE BUNDLE AND STRAIN RELIEF CLAMP USING ITEM 23 TO SECURE WIRE BUNDLE IN THE CLAMP.
16	GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING. UNLESS OTHERWISE SPECIFIED HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.
~~17~~	~~GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING FURNISHED PLUGS ITEM 50.~~
18	SOLDER PER MIL-S-6872 (ES2505-1) USING ITEM 48 OR ITEMS 46 AND 47.
19	SERIALIZE PER ND1002023.
20	LEADS USE COMMON ACCESSORY
21	IN CIRCUIT POINT FIELD I - INDICATES INNER LEAD O - INDICATES OUTER LEAD

MANNED SPACECRAFT CENTER
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6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 4 OF ~~71~~ 72

NOTE NUMBER	GENERAL NOTES DESCRIPTION
22	TYPICAL INSTALLATION OF CONTACTS AND ASSOCIATED HARDWARE--- ASSEMBLE ITEM 33 OVER BOTH LEADS (I AND O). ASSEMBLE ITEM 35, ITEM 34 OR 51, AND ITEM 32 OR 40 TO INNER LEAD IN ORDER LISTED. CRIMP ITEM 32 OR 40. ASSEMBLE ITEM 31 OR 41 TO ITEM 32 OR 40. SLIDE ITEM 35 OVER ITEM 31 OR 41 UNTIL SEATED. LAYOUTER LEAD AGAINST ITEM 31 OR 41 IN OPEN SECTION OF ITEM 35. SLIDE ITEM 33 FORWARD AGAINST SPRING AND CRIMP.
23	DELETED
~~24~~	~~ON CONN A2J4 ONE ITEM 31 TO BE ADDED TO ACCESSORIES ON TO SIDE (PG 1/11).~~
25	ASSEMBLE PER ND1002032.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.06
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 5 OF ~~71~~ 72

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	1	1	1897215-004	CONNECTOR, PLUG ELEC.
	2	1	6900050-011	CONNECTOR, PLUG ELEC.
	3	1	2900714-011	CONNECTOR, PLUG ELEC.
8	4	1	1897215-005	CONNECTOR, PLUG ELEC.
8	5	1	1897215-003	CONNECTOR, PLUG ELEC.
8	6	1	1897215-013	CONNECTOR, PLUG ELEC.
8	7	1	1897250-001	CONNECTOR, PLUG ELEC.
8	8	1	1897215-011	CONNECTOR, PLUG ELEC.
8	9	1	1897249-204	CONNECTOR, PLUG ELEC.
8	10	1	1897249-001	CONNECTOR, PLUG ELEC.
8	11	1	1897250-006	CONNECTOR, PLUG ELEC.
8	12	1	1897249-004	CONNECTOR, PLUG ELEC.
8	13	1	1897232-231	CONNECTOR, PLUG ELEC.
	14	1	6900044-001	WIRE ND1002181 TYPE 1, CLASS 1, 24AWG, WHT. 100FT. TOTAL LENGTH
	15	1	6900044-002	WIRE ND1002181 TYPE 2, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU 411FT. TOTAL LENGTH
	16	1	6900044-003	WIRE ND1002181 TYPE 3, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU, WHT/YEL 24FT. TOTAL LENGTH

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 6 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

SEE NOTE LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900044-004	WIRE ND1002181, TYPE 1, CLASS 1, 22AWG, WHT. 136FT. TOTAL LENGTH
	18	1	6900044-005	WIRE ND1002181 TYPE 1, CLASS 1, 16AWG, WHT 44FT TOTAL LENGTH
8	19	179	1010763- 2	SOLDER SLEEVE
8	20	298	1010490-228	INSULATION SLEEVING
8	21	7	1016006-002	SPLICE REDUCER
8	22	7	1010490-258	INSULATION SLEEVING
	23	AR	1901390	FILLER TAPE
8	24	14	1016128-041	BAND IDENTIFICATION
8	25	1	1016128-011	BAND IDENTIFICATION
	26	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2 BLACK (ES2752 NO. 18)
	27	1	6900044-006	WIRE ND1002131, TYPE 2, CLASS 4, WHT. JKT. 24AWG WHT/RED, WHT/BLU 344FT. TOTAL LENGTH
8	28	344	1897300-001	CONTACT SPRING CLIP
8	29		1897190- 1	CONTACT PIN
8	30		1897190- 2	CONTACT SOCKET
8	31	47 ~~44~~	1016369-288	CONTACT OUTER MALE
8	32	49 ~~46~~	1016369-388	CONTACT INNER FEMALE

MANNED SPACECRAFT CENTER
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SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 7 OF ~~71~~
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

SEE NOTE LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	33	108	1016369-588	HYRING
8	34	48 ~~49~~	1016369-712	SLEEVE INNER
8	35	106 ~~105~~	1016369-713	SLEEVE OUTER
8	36	1	1016369-721	CONTACT FEMALE
8	37	3	1016369-421	CONTACT FEMALE
8	38	32 ~~31~~	1016369-420	CONTACT MALE
8	39	6	1016369-720	CONTACT MALE
8	40	60 ~~58~~	1016369-188	CONTACT INNER MALE
8	41	59 ~~57~~	1016369-488	CONTACT OUTER FEMALE
8	42	4	1010933-105	STRAIN RELIEF CLAMP
8	43	1	1010933-104	STRAIN RELIEF CLAMP
	44	1	6900044-007	WIRE ND1002181 TYPE 3, CLASS 4 WHT JKT 24AWG, WHT/RED, WHT/BLU, WHT/YEL, 11FT. TOTAL LENGTH
	45	1	6900044-008	WIRE ND1002181 TYPE 1, CLASS 4, WHT JKT 24AWG, WHT, 43FT. TOTAL LENGTH
	46	AR	SN60WS	SOLDER QQ-S-571(ES2175-1)
	47	AR	MIL-F-14256 TYPE A OR W	FLUX(ES2798)
	48	AR	SN60WRAP	SOLDER QQ-S-571(ES2175-3)
8	49	12	1010763- 1	SOLDER SLEEVE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

SEE NOTE LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
~~8~~	~~50~~	~~100~~	~~1010490-001~~	~~SEALING PLUG~~
8	51	57	1016369-711	SLEEVE INNER
8	52	1	1897215-012	CONNECTOR, PLUG ELEC.
	53	1	6900044-009	WIRE ND1002181 TYPE 2, CLASS 4, WHT JKT 16AWG WHT/RED WHT/BLU 6FT. TOTAL LENGTH
8	54	2	1016006-004	SPLICE REDUCER
8	55	2	1010490-284	INSULATION SLEEVING
8	56	6	1897331-001	ADAPTER, CABLE CLAMP
8	57	6	1897330-001	CLAMP, CABLE
8	58	22	1010490-232	INSULATION SLEEVING
8	59	2	1010490-226	INSULATION SLEEVING

MANNED SPACECRAFT CENTER
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6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	27				5.30 2.60	5.00 2.30				A,68 A,66	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTES 9, 22
A 1A	17		SHLD A1 P3-340	 12				.25 .18	NO NO		 28	
A 1B	14		P4-2/0 SHLD A1	2				.25 .25	NO NO		31, 33	
A 1L			P3-240 P4-3/0	12 2			 .32	.18 .23	NO NO		28 31	
A 1R			P3-140 P4-3/1	12 2				.18 .21	NO NO		28 32, 34, 35	
A 2	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 2A	17		SHLD A2 P3-640	 12				.25 .18	NO NO		 28	
A 2B	14		P4-2/1 SHLD A2	2				.21 .25	NO NO		32, 34, 35	
A 2L			P3-540 P4-1/0	12 2			 .32	.18 .23	NO NO		28 31	
A 2R			P3-440 P4-1/1	12 2				.18 .21	NO NO		28 32, 34, 35	
A 3	27				5.30 2.60	5.00 2.30				A,66 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 3A	17		SHLD A3 P3-341	 12				.25 .18	NO NO		 28	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 10 OF ~~71~~
72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	14		P4-11/0	2				.23	NO		31, 33	
			SHLD A3					.25	NO			
A 3L			P3-241	12				.18	NO		28	
			P4-12/0	2			.32	.23	NO		31	
A 3R			P3-141	12				.18	NO		28	
			P4-12/1	2				.21	NO		32, 34, 35	
A 4	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 4A	17		SHLD A4					.25	NO			
			P3-641	12				.18	NO		28	
A 4B	14		P4-11/1	2				.21	NO		32, 34, 35	
			SHLD A4					.25	NO			
A 4L			P3-541	12				.18	NO		28	
			P4-10/0	2			.32	.23	NO		31	
A 4R			P3-441	12				.18	NO		28	
			P4-10/1	2				.21	NO		32, 34, 35	
A 5	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 5A	17		SHLD A5					.25	NO			
			P3-342	12				.18	NO		28	
A 5B	14		P4-5/0	2				.23	NO		31, 33	
			SHLD A5					.25	NO			
A 5L			P3-242	12				.18	NO		28	
			P4-6/0	2			.32	.21	NO		31	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 5R			P3-142	12				.18	NO		28	
			P4-6/1	2				.21	NO		32, 34, 35	
A 6	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 6A	17		SHLD A6					.25	NO			
			P3-642	12				.18	NO		28	
A 6B	14		P4-5/1	2				.21	NO		32, 34, 35	
			SHLD A6					.25	NO			
A 6L			P3-542	12				.18	NO		28	
			P4-4/0	2			.32	.23	NO		31	
A 6R			P3-442	12				.18	NO		28	
			P4-4/1	2				.21	NO		32, 34, 35	
A 7	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 7A	17		SHLD A7					.25	NO			
			P3-343	12				.18	NO		28	
A 7B	14		P4-14/0	2				.23	NO		31, 33	
			SHLD A7					.25	NO			
A 7L			P3-243	12				.18	NO		28	
			P4-15/0	2			.32	.23	NO		31	
A 7R			P3-143	12				.18	NO		28	
			P4-15/1	2				.21	NO		32, 34, 35	
A 8	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 12 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 8A	17		SHLD A8					.25	NO			
			P3-643	12				.18	NO		28	
A 8B	14		P4-14/1	2				.21	NO		32, 34, 35	
			SHLD A8					.25	NO			
A 8L			P3-543	12				.18	NO		28	
			P4-13/0	2			.32	.23	NO		31	
A 8R			P3-443	12				.18	NO		28	
			P4-13/1	2				.21	NO		32, 34, 35	
A 9	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 9A	17		SHLD A9					.25	NO			
			P3-344	12				.18	NO		28	
A 9B	14		P4-8/0	2				.23	NO		31, 33	
			SHLD A9					.25	NO			
A 9L			P3-244	12				.18	NO		28	
			P4-9/0	2			.32	.23	NO		31	
A 9R			P3-144	12				.18	NO		28	
			P4-9/1	2				.21	NO		32, 34, 35	
A 10	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 10A	17		SHLD A10					.25	NO			
			P3-644	12				.18	NO		28	
A 10B	14		P4-8/1	2				.21	NO		32, 34, 35	
			SHLD A10					.25	NO			

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

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SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10L			P3-544	12				.18	NO		28	
			P4-7/0	2			.32	.23	NO		31	
A 10R			P3-444	12				.18	NO		28	
			P4-7/1	2				.21	NO		32, 34, 35	
A 11	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 11A	17		SHLD A11					.25	NO			
			P3-345	12				.18	NO		28	
A 11B	14		P4-17/0	2				.23	NO		31, 33	
			SHLD A11					.25	NO			
A 11L			P3-245	12				.18	NO		28	
			P4-16/0	2			.32	.23	NO		31	
A 11R			P3-145	12				.18	NO		28	
			P4-18/1	2				.21	NO		32, 34, 35	
A 12	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
					2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A 12A	17		SHLD A12					.25	NO			
			P3-645	12				.18	NO		28	
A 12B	14		P4-17/1	2				.21	NO		32, 34, 35	
			SHLD A12					.25	NO			
A 12L			P3-545	12				.18	NO		28	
			P4-16/0	2			.32	.23	NO		31	
A 12R			P3-445	12				.18	NO		28	
			P4-16/1	2				.21	NO		32, 34, 35	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 14 OF ~~71~~ 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 13A	17		SHLD A13 P3-346	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 13B	17		P5-15 SHLD A13	4				.15 .25	NO NO		30	
A 13L			P3-246 P5-14	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 13R			P3-146 P5-13	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 14	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 14A	17		SHLD A14 P3-646	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 14B	17		P5-18 SHLD A14	4				.15 .25	NO NO		30	
A 14L			P3-546 P5-17	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 14R			P3-446 P5-16	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 15	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 15A	17		SHLD A15 P3-347	 12				.25 .18	NO NO		 28	 SEE NOTE 20

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HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR D
SHEET 15 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15B	17		P5-3 SHLD A15	4				.15 .25	NO NO		30	
A 15L			P3-247 P5-2	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 15R			P3-147 P5-1	12 4				.18 .15	NO NO		28 30	
A 16	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 16A	17		SHLD A16 P3-647	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 16B	17		P5-6 SHLD A16	4				.15 .25	NO NO		30	
A 16L			P3-547 P5-5	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 16R			P3-447 P5-4	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 17	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 17A	17		SHLD A17 P3-346	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 17B	17		P5-21 SHLD A17	4				.15 .25	NO NO		30	
A 17L			P3-248 P5-20	12 4				.18 .15	NO NO		28 30	SEE NOTE 20

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6900044
SCALE-NONE
REV LTR D
SHEET 16 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17R			P3-148 P5-19	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 18	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 18A	17		SHLD A18 P3-648	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 18B	17		P5-24 SHLD A18	4				.15 .25	NO NO		30	
A 18L			P3-548 P5-23	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 18R			P3-448 P5-22	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 19	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 19A	17		SHLD A19 P3-349	 12				.25 .18	NO NO		 28	 SEE NOTE 20
A 19B	17		P5-9 SHLD A19	4				.15 .25	NO NO		30	
A 19L			P3-249 P5-8	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 19R			P3-149 P5-7	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 20	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	

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HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR D
SHEET 17 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 20L			P2-K11 P3-528	15 12				.18 .18	NO NO		28 28	
A 20R			P2-H11 P3-428	15 12				.18 .18	NO NO		28 28	
A 21	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	
A 21L			P2-K10 P3-328	15 12				.18 .18	NO NO		28 28	
A 21R			P2-H10 P3-228	15 12				.18 .18	NO NO		28 28	
A 22	15				5.30 5.30	5.00 5.00				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 22A	17		SHLD A22 P2-B33	 15				.25 .18	NO NO		 28	
A 22B	17		P3-329 SHLD A22	12				.18 .25	NO NO		28	
A 22L			P2-B34 P3-229	15 12				.18 .18	NO NO		28 28	
A 22R			P2-B35 P3-129	15 12				.18 .18	NO NO		28 28	
A 23	15				5.30 5.30	5.00 5.00				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 23A	17		SHLD A23 P2-D33	 15				.25 .18	NO NO		 28	

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	23B	17	P3-629 SHLD A23	12				.18 .25	NO NO		28	
A	23L		P2-D34 P3-529	15 12				.18 .18	NO NO		28 28	
A	23R		P2-D35 P3-429	15 12				.18 .18	NO NO		28 28	
A	24	15			5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	24A	17	SHLD A24 P2-G33	15				.25 .18	NO NO		28	
A	24B	17	P3-330 SHLD A24	12				.18 .25	NO NO		28	
A	24L		P2-G34 P3-230	15 12				.18 .18	NO NO		28 28	
A	24R		P2-G35 P3-130	15 12				.18 .18	NO NO		28 28	
A	25	15			5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	25A	17	SHLD A25 P2-C33	15				.25 .18	NO NO		28	
A	25B	17	P3-630 SHLD A25	12				.18 .25	NO NO		28	
A	25L		P2-C34 P3-530	15 12				.18 .18	NO NO		28 28	

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REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	25R		P2-C35 P3-430	15 12				.18 .18	NO NO		28 28	
A	26	15			5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	26A	17	SHLD A26 P2-F33	15				.25 .18	NO NO		28	
A	26B	17	P3-331 SHLD A26	12				.18 .25	NO NO		28	
A	26L		P2-F34 P3-231	15 12				.18 .18	NO NO		28 28	
A	26R		P2-F35 P3-131	15 12				.18 .18	NO NO		28 28	
A	27	15			5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	27A	17	SHLD A27 P2-H33	15				.25 .18	NO NO		28	
A	27B	17	P3-631 SHLD A27	12				.18 .25	NO NO		28	
A	27L		P2-H34 P3-531	15 12				.18 .18	NO NO		28 28	
A	27R		P2-H35 P3-431	15 12				.18 .18	NO NO		28 28	
A	28	15			5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	28A	17	SHLD A28 E4	22				.25 .38	NO NO			
A	28B	17	P5-33 SHLD A28	4				.15 .25	NO NO		30	
A	28L		P3-232 P5-32	12 4				.18 .15	NO NO		28 30	
A	28R		P3-132 P5-31	12 4				.18 .15	NO NO		28 30	
A	29	15			5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A	29A	17	SHLD A29 E4	22				.25 .38	NO NO			
A	29B	17	P5-30 SHLD A29	4				.15 .25	NO NO		30	
A	29L		P3-532 P5-29	12 4				.18 .15	NO NO		28 30	
A	29R		P3-432 P5-28	12 4				.18 .15	NO NO		28 30	
A	31	15			5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A	31A	17	SHLD A31 E4	22				.25 .38	NO NO			
A	31B	17	P5-36 SHLD A31	4				.15 .25	NO NO		30	

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HOUSTON, TEXAS
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SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	31L		P3-533 P5-35	12 4				.18 .15	NO NO		28 30	
A	31R		P3-433 P5-34	12 4				.18 .15	NO NO		28 30	
A	32	15			5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A	32A	17	SHLD A32 E4	22				.25 .38	NO NO			
A	32B	17	P5-39 SHLD A32	4				.15 .25	NO NO		30	
A	32L		P3-234 P5-36	12 4				.18 .15	NO NO		28 30	
A	32R		P3-134 P5-37	12 4				.18 .15	NO NO		28 30	
A	33	17	P2-H8 P3-136	15 12				.18 .18	NO NO		28 28	
A	34	17	P2-K10 P3-336	15 12				.18 .18	NO NO		28 28	
A	35	14	P3-113 P9-37/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	36	14	P3-612 P9-37/O	12 6				.18 .23	NO NO		28 41, 33	
A	37	17	P3-512 P9-38	12 6				.18 .21	NO NO		28 37	

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HOUSTON, TEXAS
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SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~0~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	38	14		P3-412 P9-36/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	39	14		P3-312 P9-36/0	12 6				.18 .23	NO NO		28 41, 33	
A	40	17		P3-112 P9-52	12 6				.18 .21	NO NO		28 37	
A	41	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	41A	17		SHLD A41 P3-111	 12				.25 .18	NO NO		 28	
A	41B	17		P9-32 SHLD A41	6				.21 .25	NO NO		37	
A	41L			P3-211 P9-31/0	12 6			 .22	.18 .23	NO NO		28 41	
A	41R			P3-311 P9-31/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	42	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	42A	17		SHLD A42 P3-410	 12				.25 .18	NO NO		 28	
A	42B	14		P9-2/I SHLD A42	6				.21 .25	NO NO		40, 51, 35	
A	42L			P3-510 P9-1/0	12 6			 .22	.18 .23	NO NO		28 41	

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SCALE - NONE	REV LTR ~~0~~ D	SHEET 23 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~0~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	42R			P3-610 P9-1/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	43	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	43A	17		SHLD A43 P3-110	 12				.25 .18	NO NO		 28	
A	43B	14		P9-2/0 SHLD A43	6				.23 .25	NO NO		41, 33	
A	43L			P3-210 P9-3/0	12 6			 .22	.18 .23	NO NO		28 41	
A	43R			P3-310 P9-3/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	44	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	44A	17		SHLD A44 P3-409	 12				.25 .18	NO NO		 28	
A	44B	14		P9-5/I SHLD A44	6				.21 .25	NO NO		40, 51, 35	
A	44L			P3-509 P9-4/0	12 6			 .22	.18 .23	NO NO		28 41	
A	44R			P3-609 P9-4/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	45	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

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SCALE - NONE	REV LTR ~~0~~ D	SHEET 24 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~0~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	45A	17		SHLD A45 P3-109	 12				.25 .18	NO NO		 28	
A	45B	14		P9-5/0 SHLD A45	6				.23 .25	NO NO		41, 33	
A	45L			P3-209 P9-6/0	12 6			 .22	.18 .23	NO NO		28 41	
A	45R			P3-309 P9-6/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	46	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	46A	17		SHLD A46 P3-408	 12				.25 .18	NO NO		 28	
A	46B	14		P9-8/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A	46L			P3-508 P9-7/0	12 6			 .22	.18 .23	NO NO		28 41	
A	46R			P3-608 P9-7/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	47	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	47A	17		SHLD A47 P3-108	 12				.25 .18	NO NO		 28	
A	47B	14		P9-8/0 SHLD A47	6				.23 .25	NO NO		41, 33	

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	47L			P3-208 P9-9/0	12 6			 .22	.18 .23	NO NO		28 41	
A	47R			P3-308 P9-9/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	48	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	48A	17		SHLD A48 P3-407	 12				.25 .18	NO NO		 28	
A	48B	14		P9-11/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A	48L			P3-507 P9-10/0	12 6			 .22	.18 .23	NO NO		28 41	
A	48R			P3-607 P9-10/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	49	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	49A	17		SHLD A49 P3-107	 12				.25 .18	NO NO		 28	
A	49B	14		P9-11/0 SHLD A49	6				.23 .25	NO NO		41, 33	
A	49L			P3-207 P9-12/0	12 6			 .22	.18 .23	NO NO		28 41	
A	49R			P3-307 P9-12/I	12 6				.18 .21	NO NO		28 40, 51, 35	

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SCALE - NONE	REV LTR ~~0~~ D	SHEET 26 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	50C	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	50A	17		SHLD A50 P3-406	 12				.25 .18	NO NO		 28	
A	50B	14		P9-14/I SHLD A50	6				.21 .25	NO NO		40, 51, 35	
A	50L			P3-506 P9-13/O	12 6			 .22	.18 .23	NO NO		28 41	
A	50R			P3-606 P9-13/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	51	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	51A	17		SHLD A51 P3-106	 12				.25 .18	NO NO		 28	
A	51B	14		P9-14/O SHLD A51	6				.23 .25	NO NO		41, 33	
A	51L			P3-206 P9-15/O	12 6			 .22	.18 .23	NO NO		28 41	
A	51R			P3-306 P9-15/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	52	14		P3-213 P9-39/O	12 6				.18 .23	NO NO		28 41, 33	
A	53	14		P3-313 P9-39/I	12 6				.18 .21	NO NO		28 40, 51, 35	

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LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	54	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	54A	17		SHLD A54 P3-405	 12				.25 .18	NO NO		 28	
A	54B	14		P9-17/I SHLD A54	6				.21 .25	NO NO		40, 51, 35	
A	54L			P3-505 P9-16/O	12 6			 .22	.18 .23	NO NO		28 41	
A	54R			P3-605 P9-16/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	55	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	55A	17		SHLD A55 P3-105	 12				.25 .18	NO NO		 28	
A	55B	14		P9-17/O SHLD A55	6				.23 .25	NO NO		41, 33	
A	55L			P3-205 P9-18/O	12 6			 .22	.18 .23	NO NO		28 41	
A	55R			P3-305 P9-18/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	56	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	56A	17		SHLD A56 P3-404	 12				.25 .18	NO NO		 28	

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HOUSTON, TEXAS
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6900044
SCALE-NONE
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	56B	14		P9-20/I SHLD A56	6				.21 .25	NO NO		40, 51, 35	
A	56L			P3-504 P9-19/O	12 6			 .22	.18 .23	NO NO		28 41	
A	56R			P3-604 P9-19/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	57	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	57A	17		SHLD A57 P3-104	 12				.25 .18	NO NO		 28	
A	57B	14		P9-20/O SHLD A57	6				.23 .25	NO NO		41, 33	
A	57L			P3-204 P9-21/O	12 6			 .22	.18 .23	NO NO		28 41	
A	57R			P3-304 P9-21/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	58	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	58A	17		SHLD A58 P3-403	 12				.25 .18	NO NO		 28	
A	58B	14		P9-23/I SHLD A58	6				.21 .25	NO NO		40, 51, 35	
A	58L			P3-503 P9-22/O	12 6			 .22	.18 .23	NO NO		28 41	

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	58R			P3-603 P9-22/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	59	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	59A	17		SHLD A59 P3-103	 12				.25 .18	NO NO		 28	
A	59B	14		P9-23/O SHLD A59	6				.23 .25	NO NO		41, 33	
A	59L			P3-203 P9-24/O	12 6			 .22	.18 .23	NO NO		28 41	
A	59R			P3-303 P9-24/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	60	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	60A	17		SHLD A60 P3-402	 12				.25 .18	NO NO		 28	
A	60B	14		P9-26/I SHLD A60	6				.21 .25	NO NO		40, 51, 35	
A	60L			P3-502 P9-25/O	12 6			 .22	.18 .23	NO NO		28 41	
A	60R			P3-602 P9-25/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	61	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	61A	17		SHLD A61 P3-102	 12				.25 .18	NO NO		 28	
A	61B	14		P9-26/0 SHLD A61	6				.23 .25	NO NO		41, 33	
A	61L			P3-202 P9-27/0	12 6			 .22	.18 .23	NO NO		28 41	
A	61R			P3-302 P9-27/1	12 6				.18 .21	NO NO		28 40, 51, 35	
A	62	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	62A	17		SHLD A62 P3-401	 12				.25 .16	NO NO		 28	
A	62B	14		P9-29/1 SHLD A62	6				.21 .25	NO NO		40, 51, 35	
A	62L			P3-501 P9-28/0	12 6			 .22	.18 .23	NO NO		26 41	
A	62R			P3-601 P9-28/1	12 6				.16 .21	NO NO		28 40, 51, 35	
A	63	27				5.30 2.60	5.00 2.30				A,65 A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	63A	17		SHLD A63 P3-101	 12				.25 .18	NO NO		 28	
A	63B	14		P9-29/0 SHLD A63	6				.23 .25	NO NO		41, 33	

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	63L			P3-201 P9-30/0	12 6			 .22	.18 .23	NO NO		28 41	
A	63R			P3-301 P9-30/1	12 6				.18 .21	NO NO		28 40, 51, 35	
A	64	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	64A	17		SHLD A64 P3-649	 12				.25 .18	NO NO		 28	SEE NOTE 20 SEE NOTE 20
A	64B	17		P5-12 SHLD A64	4				.15 .25	NO NO		30	
A	64L			P3-549 P5-11	12 4				.16 .15	NO NO		28 30	SEE NOTE 20
A	64R			P3-449 P5-10	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A	65	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	65A	17		SHLD A65 E4	 22				.25 .38	NO NO			
A	65B	17		P6-12 SHLD A65	5				.15 .25	NO NO		29	
A	65L			P3-215 P6-36	12 5				.18 .15	NO NO		28 29	
A	65R			P3-115 P6-19	12 5				.18 .15	NO NO		28 29	

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SCALE-NONE REV LTR ~~B~~ ~~C~~ D SHEET 32 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	66	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	66A	17		SHLD A66 E4	 22				.25 .38	NO NO			
A	66B	17		P6-15 SHLD A66	5				.15 .25	NO NO		29	
A	66L			P3-415 P6-31	12 5				.18 .15	NO NO		28 29	
A	66R			P3-315 P6-30	12 5				.18 .15	NO NO		28 29	
A	67	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	67A	17		SHLD A67 E4	 22				.25 .38	NO NO			
A	67B	17		P6-1 SHLD A67	5				.15 .25	NO NO		29	
A	67L			P3-615 P6-5	12 5				.18 .15	NO NO		28 29	
A	67R			P3-515 P6-4	12 5				.18 .15	NO NO		28 29	
A	68	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	68A	17		SHLD A68 E4	 22				.25 .38	NO NO			

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	68B	17		P6-26 SHLD A68	5				.15 .25	NO NO		29	
A	68L			P3-216 P6-11	12 5				.18 .15	NO NO		28 29	
A	68R			P3-116 P6-25	12 5				.18 .15	NO NO		28 29	
A	69	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	69A	17		SHLD A69 E4	 22				.25 .38	NO NO			
A	69B	17		P6-16 SHLD A69	5				.15 .25	NO NO		29	
A	69L			P3-416 P6-33	12 5				.18 .15	NO NO		28 29	
A	69R			P3-316 P6-17	12 5				.16 .15	NO NO		26 29	
A	70	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	70A	17		SHLD A70 E4	 22				.25 .38	NO NO			
A	70B	17		P6-13 SHLD A70	5				.15 .25	NO NO		29	
A	70L			P3-616 P6-28	12 5				.18 .15	NO NO		28 29	

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	70R			P3-516 P6-27	12 5				.18 .15	NO NO		28 29	
A	71	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	71A	17		SHLD A71 E4	 22				.25 .38	NO NO			
A	71B	17		P6-9 SHLD A71	5 				.15 .25	NO NO		29 	
A	71L			P3-217 P6-23	12 5				.18 .15	NO NO		28 29	
A	71R			P3-117 P6-22	12 5				.18 .15	NO NO		28 29	
A	72	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	72A	17		SHLD A72 P7-17	 8				.25 .15	NO NO		 30	
A	72B	17		P13-17 SHLD A72	1 				.15 .25	NO NO		30 	
A	72L			P7-33 P13-33	8 1				.15 .15	NO NO		30 30	
A	72R			P7-16 P13-16	8 1				.15 .15	NO NO		30 30	
A	73	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	73A	17		SHLD A73 P7-9	 8				.25 .15	NO NO		 30	
A	73B	17		P13-9 SHLD A73	1 				.15 .25	NO NO		30 	
A	73L			P7-21 P13-21	8 1				.15 .15	NO NO		30 30	
A	73R			P7-22 P13-22	8 1				.15 .15	NO NO		30 30	
A	74	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	74A	17		SHLD A74 P7-24	 8				.25 .15	NO NO		 30	
A	74B	17		P13-24 SHLD A74	1 				.15 .25	NO NO		30 	
A	74L			P7-23 P13-23	8 1				.15 .15	NO NO		30 30	
A	74R			P7-10 P13-10	8 1				.15 .15	NO NO		30 30	
A	75	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	75A	17		SHLD A75 P7-26	 8				.25 .15	NO NO		 30	
A	75B	17		P13-26 SHLD A75	1 				.15 .25	NO NO		30 	

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	75L			P7-25 P13-25	8 1				.15 .15	NO NO		30 30	
A	75R			P7-11 P13-11	8 1				.15 .15	NO NO		30 30	
A	76	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	76A	17		SHLD A76 P7-13	 8				.25 .15	NO NO		 30	
A	76B	17		P13-13 SHLD A76	1 				.15 .25	NO NO		30 	
A	76L			P7-27 P13-27	8 1				.15 .15	NO NO		30 30	
A	76R			P7-12 P13-12	8 1				.15 .15	NO NO		30 30	
A	77	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	77A	17		SHLD A77 P7-30	 8				.25 .15	NO NO		 30	
A	77B	17		P13-30 SHLD A77	1 				.15 .25	NO NO		30 	
A	77L			P7-29 P13-29	8 1				.15 .15	NO NO		30 30	
A	77R			P7-14 P13-14	8 1				.15 .15	NO NO		30 30	

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	78	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	
A	78A	17		SHLD A78 P7-32	 8				.25 .15	NO NO		 30	
A	78B	17		P13-32 SHLD A78	1 				.15 .25	NO NO		30 	
A	78L			P7-31 P13-31	8 1				.15 .15	NO NO		30 30	
A	78R			P7-15 P13-15	8 1				.15 .15	NO NO		30 30	
A	79	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A	79A	14		SHLD A79 P8-25/I	 7				.25 .21	NO NO		 32, 34, 35	
A	79B	17		P13-38 SHLD A79	1 				.15 .25	NO NO		30 	
A	79L			P8-24/O P13-62	7 1			.32 	.23 .15	NO NO		31 30	
A	79R			P8-24/I P13-63	7 1				.21 .15	NO NO		32, 34, 35 30	
A	80	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	80L			P11-30 P13-56	9 1				.15 .15	NO NO		29 30	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 80R			P11-29 P13-81	9 1				.15 .15	NO NO		29 30	
A 81	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 81L			P11-2 P13-1	9 1				.15 .15	NO NO		29 30	
A 81R			P11-1 P13-2	9 1				.15 .15	NO NO		29 30	
A 82	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 82L			P11-4 P13-4	9 1				.15 .15	NO NO		29 30	
A 82R			P11-3 P13-3	9 1				.15 .15	NO NO		29 30	
A 83	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 83L			P11-6 P13-6	9 1				.15 .15	NO NO		29 30	
A 83R			P11-5 P13-5	9 1				.15 .15	NO NO		29 30	
A 84	15				2.80 2.80	2.50 2.50				A,6B A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 84A	17		SHLD A84 P7-36	 8				.25 .15	NO NO		 30	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 84B	17		P13-36 SHLD A84	1				.15 .25	NO NO		30	
A 84L			P7-35 P13-35	8 1				.15 .15	NO NO		30 30	
A 84R			P7-18 P13-18	8 1				.15 .15	NO NO		30 30	
A 85	15				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 85A	17		SHLD A85 P7-20	 8				.25 .15	NO NO		 30	
A 85B	17		P13-20 SHLD A85	1				.15 .25	NO NO		30	
A 85L			P7-37 P13-37	8 1				.15 .15	NO NO		30 30	
A 85R			P7-19 P13-19	8 1				.15 .15	NO NO		30 30	
A 86	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 86L			P11-38 P13-61	9 1				.15 .15	NO NO		29 30	
A 86R			P11-37 P13-85	9 1				.15 .15	NO NO		29 30	
A 87	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87L			P11-40 P13-59	9 1				.15 .15	NO NO		29 30	
A 87R			P11-39 P13-84	9 1				.15 .15	NO NO		29 30	
A 88	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 88L			P11-42 P13-58	9 1				.15 .15	NO NO		29 30	
A 88R			P11-41 P13-82	9 1				.15 .15	NO NO		29 30	
A 89	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 89A	14		SHLD A89 P8-11/1	 7				.25 .21	NO NO		 32, 34, 35	
A 89B	17		P13-42 SHLD A89	1				.15 .25	NO NO		30	
A 89L			P8-10/0 P13-66	7 1			.32	.23 .15	NO NO		31 30	
A 89R			P8-10/1 P13-41	7 1				.21 .15	NO NO		32, 34, 35 30	
A 90	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 90A	14		SHLD A90 P8-8/0	 7				.25 .23	NO NO		 31, 33	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 90B	17		P13-71 SHLD A90	1				.15 .25	NO NO		30	
A 90L			P8-9/0 P13-70	7 1			.32	.23 .15	NO NO		31 30	
A 90R			P8-9/1 P13-46	7 1				.21 .15	NO NO		32, 34, 35 30	
A 91	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 91A	14		SHLD A91 P8-8/1	 7				.25 .21	NO NO		 32, 34, 35	
A 91B	17		P13-47 SHLD A91	1				.15 .25	NO NO		30	
A 91L			P8-7/0 P13-48	7 1			.32	.23 .15	NO NO		31 30	
A 91R			P8-7/1 P13-72	7 1				.21 .15	NO NO		32, 34, 35 30	
A 92	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 92A	14		SHLD A92 P8-5/0	 7				.25 .23	NO NO		 31, 33	
A 92B	17		P13-80 SHLD A92	1				.15 .25	NO NO		30	
A 92L			P8-6/0 P13-79	7 1			.32	.23 .15	NO NO		31 30	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 92R			P8-6/I P13-55	7 1				.21 .15	NO NO		32, 34, 35 30	
A 93	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 93A	14		SHLD A93 P8-5/I	 7				.25 .21	NO NO		 32, 34, 35	
A 93B	17		P13-40 SHLD A93	1				.15 .25	NO NO		30	
A 93L			P8-4/0 P13-65	7 1			.32	.23 .15	NO NO		31 30	
A 93R			P8-4/I P13-64	7 1				.21 .15	NO NO		32, 34, 35 30	
A 94	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 94A	14		SHLD A94 P8-2/0	 7				.25 .23	NO NO		 31, 33	
A 94B	17		P13-52 SHLD A94	1				.15 .25	NO NO		30	
A 94L			P8-3/0 P13-76	7 1			.32	.23 .15	NO NO		31 30	
A 94R			P8-3/I P13-77	7 1				.21 .15	NO NO		32, 34, 35 30	
A 95	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95A	14		SHLD A95 P8-2/I	 7				.25 .21	NO NO		 32, 34, 35	
A 95B	17		P13-54 SHLD A95	1				.15 .25	NO NO		30	
A 95L			P8-1/0 P13-78	7 1			.32	.23 .15	NO NO		31 30	
A 95R			P8-1/I P13-53	7 1				.21 .15	NO NO		32, 34, 35 30	
A 96	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 96A	14		SHLD A96 P8-11/0	 7				.25 .23	NO NO		 31, 33	
A 96B	17		P13-68 SHLD A96	1				.15 .25	NO NO		30	
A 96L			P8-12/0 P13-67	7 1			.32	.23 .15	NO NO		31 30	
A 96R			P8-12/I P13-43	7 1				.21 .15	NO NO		32, 34, 35 30	
A 97	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 97A	17		SHLD A97 P8-14	 7				.25 .18	NO NO		 38	
A 97B	17		P13-45 SHLD A97	1				.15 .25	NO NO		30	

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HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97L			P8-13/0 P13-69	7 1			.32	.23 .15	NO NO		31 30	
A 97R			P8-13/I P13-44	7 1				.21 .15	NO NO		32, 34, 35 30	
A 98	14		P2-G19 P8-42/I	15 7				.18 .21	NO NO		28 32, 33	
A 99	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 99L			P2-A25 P4-23/0	15 2			 .32	.18 .23	NO NO		28 31, 33	
A 99R			P2-A24 P4-23/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100	7				5.30 2.30	5.00 2.00				B,7 B,7	20 20, 33	
A 100L			P2-K30 P4-26/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100R			P2-K31 P4-26/0	15 2			 .32	.18 .23	NO NO		28 31	
A 102	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 102L			P2-K7 P1-30	15 3				.18 .18	NO NO		28 38	
A 102R			P2-K6 P1-29	15 3				.18 .18	NO NO		28 38	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 103L			P2-D7 P1-23	15 3				.18 .18	NO NO		28 38	
A 103R			P2-D6 P1-22	15 3				.18 .18	NO NO		28 38	
A 104	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 104L			P2-C7 P1-19	15 3				.18 .18	NO NO		28 38	
A 104R			P2-C6 P1-18	15 3				.18 .18	NO NO		28 38	
A 105	17		P2-F8 P1-24	15 3				.18 .18	NO NO		28 38	
A 107	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 107L			E11 P1-28	14 3				.38 .18	NO NO		 38	
A 107R			E13 P1-27	16 3				.38 .18	NO NO		 38	
A 108	16				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 108L			P2-G12 P1-33	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 108R			P2-D12 P1-32	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 108Y			P2-F12 P1-34	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 109	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 109L			P2-B14 P1-38	15 3				.18 .18	NO NO		28 38	
A 109R			P2-A14 P1-37	15 3				.18 .18	NO NO		28 38	
A 110	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 110L			P2-K13 P1-42	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 110R			P2-H13 P1-41	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 112	15				2.30 5.30	2.00 5.00				B,7 B,7	20 20	
A 112L			P11-35 P2-K14	9 15				.15 .18	NO NO		29 28	
A 112R			P11-34 P2-H14	9 15				.15 .18	NO NO		29 28	
A 114	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044

SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 47 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 114A	17		SHLD A114 E1	 21				.25 .25	NO NO			
A 114W			P12-2/I P3-620	18 12				.21 .18	NO NO		35, 40, 51 28	
A 115	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	
A 115A	17		SHLD A115 E1	 21				.25 .25	NO NO			
A 115W			P12-9/I P3-121	18 12				.21 .18	NO NO		35, 40, 51 28	
A 116	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 116A	17		SHLD A116 F1	 21				.25 .25	NO NO			
A 116W			P12-3/I P3-221	18 12				.21 .18	NO NO		35, 40, 51 28	
A 117	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 117A	17		SHLD A117 E1	 21				.25 .25	NO NO			
A 117W			P12-10/I P3-321	18 12				.21 .18	NO NO		35, 40, 51 28	
A 118	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044

SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 48 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 118A	17		SHLD A118 E1	 21				.25 .25	NO NO			
A 118W			P12-3/0 P3-421	18 12			.22	.23 .18	NO NO		41 26	
A 119	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 119A	17		SHLD A119 E1	 21					NO NO			
A 119W			P12-10/0 P3-521	18 12			.22	.23 .18	NO NO		41 28	
A 120	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 120A	17		SHLD A120 E2	 19				.25 .25	NO NO			
A 120W			P12-1/0 P3-621	18 12				.23 .18	NO NO		41 28	
A 121	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 121A	17		SHLD A121 E2	 19				.25 .25	NO NO			
A 121W			P12-11/I P3-122	18 12				.21 .18	NO NO		35, 40, 51 28	
A 122	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58. 58	SEE NOTE 9

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SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 49 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 122A	17		SHLD A122 E2	 19				.25 .25	NO NO			
A 122W			P12-1/I P3-222	18 12				.21 .18	NO NO		35, 40, 51 28	
A 123	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 123A	17		SHLD A123 E2	 19				.25 .25	NO NO			
A 123W			P12-11/0 P3-322	18 12				.23 .18	NO NO		41 28	
A 124	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 124L			P2-B26 P4-19/0	15 2			 .32	.18 .23	NO NO		28 31	
A 124R			P2-A26 P4-19/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 125	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 125L			P2-B28 P4-20/0	15 2			 .32	.18 .23	NO NO		28 31	
A 125R			P2-A28 P4-20/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 126	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044

SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 50 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126L			P2-B30 P4-21/0	15 2			.32	.18 .23	NO NO		28 31	
A 126R			P2-A30 P4-21/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 127	15				2.80 5.30	2.50 5.00				B,7 B,7	20 20	
A 127L			P11-32 P2-B15	9 15				.15 .18	NO NO		29 28	
A 127R			P11-31 P2-A15	9 15				.15 .18	NO NO		29 26	
A 128	15				5.30 2.80	5.00 2.50				B,7 B,7	20 20	
A 128L			P2-A21 P3-33B	15 12				.18 .18	NO NO		28 28	
A 128R			P2-B21 P3-23B	15 12				.18 .18	NO NO		28 26	
A 129	17		P2-B17 P3-13B	15 12				.18 .18	NO NO		26 28	
A 130	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 130L			P2-K28 P4-25/0	15 2			.32	.18 .23	NO NO		28 31	
A 130R			P2-K29 P4-25/I	15 2				.18 .21	NO NO		28 32, 34, 35	

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6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 131	15				5.30 2.80	5.00 2.50				B,7 B,7	20 20	
A 131L			P2-G5 E11	15 14				.18 .38	NO NO		28	
A 131R			P2-G4 E10	15 13				.18 .38	NO NO		28	
A 132			DELETED									
A 132L			DELETED									
A 132R			DELETED									
A 134	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 134A	17		SHLD A134 P2-G23	 15				.25 .18	NO NO		28	
A 134B	14		P8-25/0 SHLD A134	7				.23 .25	NO NO		31, 33	
A 134L			P2-K23 P8-26/0	15 7			.32	.18 .23	NO NO		28 31	
A 134R			P2-H23 P8-26/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 135	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

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HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 135A	17		SHLD A135 P2-G24	 15				.25 .18	NO NO		28	
A 135B	14		P8-16/I SHLD A135	7				.21 .25	NO NO		32, 34, 35	
A 135L			P2-K24 P8-15/0	15 7			.32	.18 .23	NO NO		28 31	
A 135R			P2-H24 P8-15/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 136	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 136A	17		SHLD A136 P2-G25	 15				.25 .18	NO NO		28	
A 136B	14		P8-16/0 SHLD A136	7				.23 .25	NO NO		31, 33	
A 136L			P2-K25 P8-17/0	15 7			.32	.18 .23	NO NO		28 31	
A 136R			P2-H25 P8-17/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 137	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 137A	17		SHLD A137 P2-G21	 15				.25 .18	NO NO		28	
A 137B	14		P8-19/I SHLD A137	7				.21 .25	NO NO		32, 34, 35	

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HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 137L			P2-K21 P8-18/0	15 7			.32	.18 .23	NO NO		28 31	
A 137R			P2-H21 P8-18/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 139	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 139A	17		SHLD A139 P2-G22	 15				.25 .18	NO NO		28	
A 139B	14		P8-19/0 SHLD A139	7				.23 .25	NO NO		31, 33	
A 139L			P2-K22 P8-20/0	15 7			.32	.18 .23	NO NO		28 31	
A 139R			P2-H22 P8-20/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 141	14		P12-4/I P2-F9	18 15				.21 .18	NO NO		40, 51, 35 28	
A 142	15				2.80 5.30	2.50 5.00				B,7 B,7	20 20	
A 142L			P11-12 P2-D1	9 15				.15 .18	NO NO		29 28	
A 142R			P11-11 P2-D2	9 15				.15 .18	NO NO		29 26	
A 144	27				3.30 5.30	3.00 5.00				A,6A B,7	33, 19, 20 20	

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SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 144A	17		SHLD A144 E2	 19				.25 .25	NO NO			
A 144L			P12-16/0 P2-G28	18 15			.22	.23 .18	NO NO		41 28	
A 144R			P12-16/I P2-G31	18 15				.21 .18	NO NO		35, 40, 51 28	
A 145	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 20 20	SEE NOTE 9
A 145A	17		SHLD A145 E2	 19				.25 .25	NO NO			
A 145W			P12-15/0 P2-G30	18 15				.23 .16	NO NO		41 28	
A 147	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 147A	17		SHLD A147 E2	 19				.25 .25	NO NO			
A 147W			P12-15/I P2-G29	18 15				.21 .18	NO NO		35, 40, 51 28	
A 154	27				2.80 2.80	2.50 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 154B	17		P3-347 SHLD A154	12				.18 .25	NO NO			SEE NOTE 20
A 154L			P14-34/0 P3-247	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 55 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154R			P14-34/I P3-147	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 155	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 155B	17		P3-647 SHLD A155	12				.18 .25	NO NO			SEE NOTE 20
A 155L			P14-35/0 P3-547	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 155R			P14-35/I P3-447	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 156	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 156B	17		P3-349 SHLD A156	12				.18 .25	NO NO			SEE NOTE 20
A 156L			P14-32/0 P3-249	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 156R			P14-32/I P3-149	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 157	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 157B	17		P3-649 SHLD A157	12				.18 .25	NO NO			SEE NOTE 20
A 157L			P14-33/0 P3-549	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 56 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 157R			P14-33/I P3-449	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 158	14		P12-2/0 P3-119	18 12				.23 .18	NO NO		41, 33 28	
A 159	14		P12-9/0 P3-422	18 12				.23 .18	NO NO		41, 33 28	
A 164	27				2.80 2.80	2.50 2.50				B,7 B,7	20, 33 20	
A 164L			P14-31/0 P13-8	17 1			.22	.23 .15	NO NO		41 30	
A 164R			P14-31/I P13-7	17 1				.21 .15	NO NO		40, 51, 35 30	
A 165	27				2.80 5.30	2.50 5.00				B,7 B,7	20, 33 20	
A 165L			P12-46/0 P2-A23	18 15			.22	.23 .18	NO NO		41 28	
A 165R			P12-46/I P2-B23	18 15				.21 .18	NO NO		40, 51, 35 28	
A 171	44				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 171L			P12-4/0 ~~P2-G9~~ E14-B	18 ~~15~~ 23			.22	.23 ~~.18~~ .25	NO NO		41, 33 ~~28~~	~~SEE NOTE 29~~
A 171R			P12-33/0 P2-G8	18 15			.22	.23 .18	NO NO		41, 33 28	SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 57 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 171Y			P12-33/I E13	18 16				.21 .38	NO NO		40, 51, 35	
A 178	15				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 178L			P11-14 P2-C1	9 15				.15 .18	NO NO		29 28	
A 178R			P11-13 P2-C2	9 15				.15 .18	NO NO		29 28	
A 284	14		P2-A22 P8-41	15 7				.18 ~~.21~~ .18	NO NO		28 ~~32, 34, 35~~ 38	~~SEE NOTE 24~~
A 344	16				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 344L			P2-F14 P1-46	15 3				.18 .16	NO NO		28 39	SEE NOTE 20
A 344R			P2-G14 P1-45	15 3				.16 .18	NO NO		28 39	SEE NOTE 20
A 344Y			P2-D14 P1-44	15 3				.18 .16	NO NO		28 39	SEE NOTE 20
A 345	15				3.30 3.30	3.00 3.00				B,7 B,7	20 20	
A 345L			E11 P1-26	14 3				.38 .16	NO NO		 38	
A 345R			E13 P1-25	16 3				.38 .18	NO NO		 38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 58 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 346	15				3.80	3.50				B,7	20	
					3.80	3.50				B,7	20	
A 346L			E11	14				.38	NO			
			P1-26	3				.18	NO		38	
A 346R			E13	16				.38	NO			
			P1-25	3				.18	NO		38	
A 347	15				3.80	3.50				B,7	20	
					3.80	3.50				B,7	20	
A 347L			E11	14				.38	NO			
			P1-28	3				.18	NO		38	
A 347R			E13	16				.38	NO			
			P1-27	3				.18	NO		38	
→ A 348	17		P2-A8	15				.18	NO		28	←
			E13	16				.38	NO			
A 348L			DELETED									
A 348R			DELETED									
A 349	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 349L			P2-G7	15				.18	NO		28	
			P1-19	3				.18	NO		38	
A 349R			P2-G6	15				.18	NO		28	
			P1-18	3				.18	NO		38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 59 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 350	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 350L			P2-B7	15				.18	NO		28	
			P1-23	3				.18	NO		38	
A 350R			P2-B6	15				.18	NO		28	
			P1-22	3				.18	NO		38	
A 351	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 351L			P2-F7	15				.18	NO		28	
			P1-21	3				.18	NO		38	
A 351R			P2-F6	15				.18	NO		28	
			P1-20	3				.18	NO		38	
→ A 352	15				5.30	5.00				B,7	20	←
					3.80	3.50				B,7	20	
A 352L			P2-A7	15				.18	NO		28	
			P1-21	3				.18	NO		38	
A 352R			P2-A6	15				.18	NO		28	
			P1-20	3				.18	NO		38	
A 353	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 353L			P2-A5	15				.18	NO		28	
			E11	14				.38	NO			
A 353R			P2-A4	15				.18	NO		28	
			E10	13				.38	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 60 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 354	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 354L			P2-B5	15				.18	NO		28	
			E11	14				.38	NO			
A 354R			P2-B4	15				.18	NO		28	
			E10	13				.38	NO			
A 355	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 355L			P2-C5	15				.18	NO		28	
			E11	14				.38	NO			
A 355R			P2-C4	15				.18	NO		28	
			E10	13				.38	NO			
→ A 356	15				5.30	5.00				B,7	20	←
					4.30	4.00				B,7	20	
A 356L			P2-D5	15				.18	NO		28	
			E11	14				.38	NO			
A 356R			P2-D4	15				.18	NO		28	
			E10	13				.38	NO			
A 357	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 357L			P2-F5	15				.18	NO		28	
			E11	14				.38	NO			
A 357R			P2-F4	15				.18	NO		28	
			E10	13				.38	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 61 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 358	15				5.30	5.00				A,68	19, 20	
					2.60	2.30				A,68	19, 20	
A 358A	17		SHLD A358					.25	NO			
			E4					.38	NO			
A 358B	17		P5-42	4				.15	NO		30	
			SHLD A358					.25	NO			
A 358L			P3-337	12				.18	NO		28	
			P5-41	4				.15	NO		30	
A 358R			P3-237	12				.18	NO		28	
			P5-40	4				.15	NO		30	
A 359	15				5.30	5.00				A,68	19, 20	
					2.60	2.30				A,68	19, 20	
→ A 359A	17		SHLD A359					.25	NO			←
			E4					.38	NO			
A 359B	17		P5-45	4				.15	NO		30	
			SHLD A359					.25	NO			
A 359L			P3-537	12				.18	NO		28	
			P5-44	4				.15	NO		30	
A 359R			P3-437	12				.18	NO		28	
			P5-43	4				.15	NO		30	
A 360	14		P3-611	12				.18	NO		28	
			P9-33/0	6				.23	NO		41, 33	
A 361	15				5.30	5.00				8,7	20	
					2.60	2.30				~~8,7~~ A,68	~~20~~ 19,20	
A 361B	17		P5-81	4				.15	NO		30	
			SHLD A361					.25	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 62 OF ~~71~~ 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 361L			P2-K15 P5-83	15 4				.18 .15	NO NO		28 30	
A 361R			P2-H15 P5-82	15 4				.18 .15	NO NO		28 30	
A 365	14		P12-31/I P1-12	18 3				.21 .18	NO NO		40, 51, 35 38	
A 366	17		P3-236 E12	12 11				.18 .38	NO NO		28	
A 367	17		P3-436 E12	12 11				.18 .38	NO NO		28	
A 385	53				3.80 3.80	3.50 3.50				B,7 B,7	59 59	
A 385L			P10-B E11	10 14				.28 .38	YES NO			
A 385R			P10-A E10	10 13				.28 .38	YES NO			
A 387	18		P10-H E13	10 16				.28 .38	YES NO			
A 397	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 397L			P2-K12 P1-42	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 397R			P2-H12 P1-41	15 3				.18 .18	NO NO		28	SEE NOTE 20

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HOUSTON, TEXAS
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6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 63 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 398	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 398L			P2-F11 P1-34	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 398R			P2-D11 P1-32	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 398Y			P2-G11 P1-35	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 399L			P2-F13 P1-46	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399R			P2-D13 P1-44	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399Y			P2-G13 P1-45	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 417	14		P12-31/O P1-13	18 3			.22	.23 .18	NO NO		41, 33 38	
A 420	14		P2-G20 P8-44/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 421	14		P2-H20 P8-44/O	15 7				.18 .23	NO NO		28 31, 33	
A 424	17		P2-G18 P4-22	15 2				.18 .18	NO NO		28 38	

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HOUSTON, TEXAS
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6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 64 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 426	18		P10-R E12	10 11				.28 .38	YES NO			
A 442	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 442B	17		P3-646 SHLD A442	12				.18 .25	NO NO			SEE NOTE 20
A 442L			P12-24/O P3-546	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 442R			P12-24/I P3-446	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 443	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 443B	17		P3-348 SHLD A443	12				.18 .25	NO NO			SEE NOTE 20
A 443L			P12-25/O P3-248	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 443R			P12-25/I P3-148	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 444	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 444B	17		P3-648 SHLD A444	12				.18 .25	NO NO			SEE NOTE 20
A 444L			P12-26/O P3-548	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20

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REV LTR ~~B~~ ~~C~~ D
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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 444R			P12-26/I P3-448	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 445	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 445B	17		P3-346 SHLD A445	12				.18 .25	NO NO			SEE NOTE 20
A 445L			P12-23/O P3-246	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 445R			P12-23/I P3-146	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 446	18		P10-E E10	10 13				.28 .38	YES NO			
A 449	18		P10-G E11	10 14				.28 .38	YES NO			
A 450	18		P10-N E11	10 14				.28 .38	YES NO			
A 453	18		P10-U P10-C*	10 10				.28 .28	YES YES			
A 454	18		P10-F E13	10 16				.28 .38	YES NO			
A 455	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 455A	17		SHLD A455 E4	 22				.25 .38	NO NO			

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6900044
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REV LTR ~~B~~ ~~C~~ D
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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 455B	17		P5-27 SHLD A455	4				.15 .25	NO NO		30	
A 455L			P3-233 P5-26	12 4				.18 .15	NO NO		28 30	
A 455R			P3-133 P5-25	12 4				.18 .15	NO NO		28 30	
A 456	15				5.30 2.60	5.00 2.30				8,7 8,7	20 20	
A 456L			P2-G16 P5-60	15 4				.18 .15	NO NO		28 30	
A 456R			P2-H16 P5-79	15 4				.18 .15	NO NO		28 30	
A 457	44				5.30 3.30	5.00 3.00				8,7 8,7	20 20	
A 457L			E14-B ~~P2-G4~~ P11-9	23 ~~15~~ 9				.25 ~~.18~~ .15	 NO NO		 29	~~SEE NOTE 20~~
A 457R			P2-G8 P11-7	15 9				.18 .15	NO NO		 29	SEE NOTE 20
A 457Y			E13 P11-8	16 9				.38 .15	NO NO		 29	
A 458	18		F1 E3	21 20				.25 .25	NO NO			
A 459	18		E2 E3	19 20				.25 .25	NO NO			

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SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 67 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 460	18		E3 P12-44	20 18				.25 .25	NO NO		 36	
A 461	17		P9-55 P3-438	6 12				.21 .18	NO NO		37 28	
A 462	17		E4	22				.38	NO			
A 463	15				4.80 4.80	4.50 4.50				8,7 8,7	20 20	
A 463L			P11-~~65~~ 66 ~~P2-A27~~ E14-B	9 ~~15~~ 23				.15 ~~.18~~ .25	NO NO		29 ~~28~~	
A 463R			P11-~~66~~ 65 P2-~~B27~~ A27	9 15				.15 .18	NO NO		29 28	
A 464	15				4.80 4.80	4.50 4.50				8,7 8,7	20 20	
A 464L			P11-~~67~~ 68 ~~P2-A29~~ E14-B	9 ~~15~~ 23				.15 ~~.18~~ .25	NO NO		29 ~~28~~	
A 464R			P11-~~68~~ 67 P2-~~B29~~ A29	9 15				.15 .18	NO NO		29 28	
A 465	15				4.80 4.80	4.50 4.50				8,7 8,7	20 20	
A 465L			P11-~~69~~ 70 ~~P2-A31~~ E14-B	9 ~~15~~ 23				.15 ~~.18~~ .25	NO NO		29 ~~28~~	
A 465R			P11-~~70~~ 69 P2-~~B31~~ A31	9 15				.15 .18	NO NO		29 28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 68 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 466	14		P2-H17 P3-42/O	15 7				.25 .23	NO NO		28 31, 34, 35	
A 467	17		P6-37 P6-38	5 5				.15 .15	NO NO		29 29	
A 468	14		P1-50/I P1-50/O	3 3				.21 .23	NO NO		31, 33 32, 34, 35	
A 469	14		P9-40/I P3-522	6 12				.21 .18	NO NO		40, 51, 35 28	
A 470	14		P9-40/O P3-622	6 12				.23 .18	NO NO		41, 33 28	
A 471	17		P2-K4 E13	15 16				.18 .38	NO NO		28	
A 472	17		P2-C8 P1-~~15~~ 2	15 3				.18 .18	NO NO		28 38	
A 473	17		P2-B9 P1-~~50~~ 55	15 3				.18 .18	NO NO		28 38	
A 474	27				3.30 5.30	3.00 5.00				8,7 8,7	20, 33 20	SEE NOTE 9
A 474L			P12-47/O P2-F2	18 15			.22	.23 .18	NO NO		41 28	
A 474R			P12-47/I P2-F1	18 15				.21 .18	NO NO		40, 51, 35 28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 69 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 D

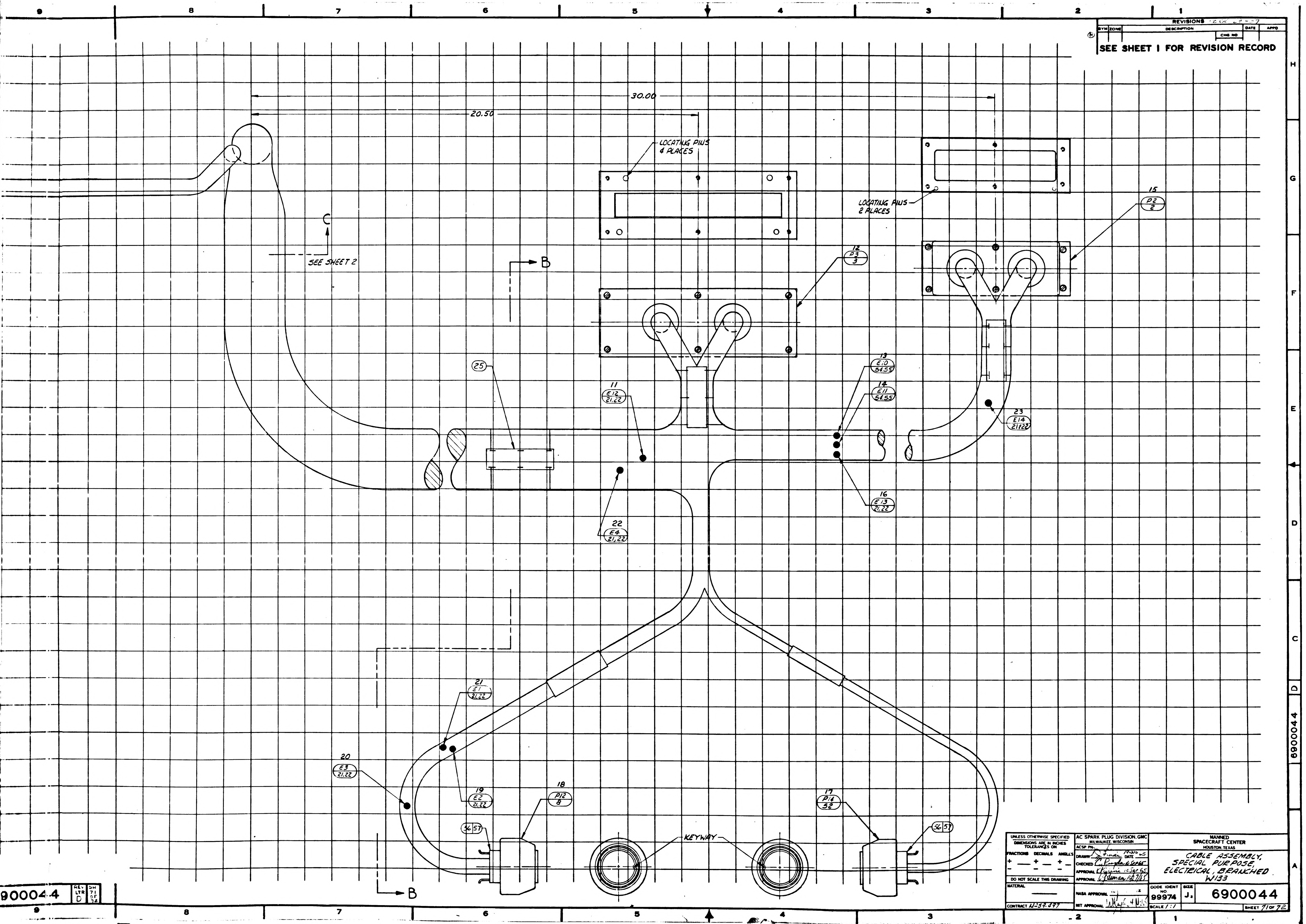
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 475	17		E14-B P2-49	23 15				.25 .18	NO NO		 28	
A 476	17		P12-12/O P2-B27	18 15				.23 .18	NO NO		41, 33 28	
A 477	14		P12-12/I P2-B29	18 15				.21 .18	NO NO		51, 40, 35 28	
A 478	14		P12-14/I P2-B31	18 15				.21 .18	NO NO		51, 40, 35 28	
A 479	17		P12-14/O E14-B	18 23				.23 .25	NO NO		41, 33	

SIZE A | CODE IDENT. NO. | 6900044
SCALE NONE | REV LTR D | SHEET 70 OF 72

MIL 2084 8-65

REVISIONS
SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD

SEE SHEET I FOR REVISION RECORD


30.00
20.50
LOCATING PINS 4 PLACES
LOCATING PINS 2 PLACES
C
SEE SHEET 2
B
15
P2 / 2
12
P3 / 3
25
11
E12 / 21,22
13
E10 / 54,55
14
E11 / 54,55
23
E14 / 21,22
16
E13 / 21,22
22
E4 / 21,22
21
E1 / 21,22
20
E3 / 21,22
19
E2 / 21,22
18
P12 / 8
17
P16 / 32
56 57
56 57
KEYWAY
B

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. Finan DATE 19 AUG 65
CHECKED C. Rumple 10 Sep 65
APPROVAL [illegible] 10 Sep 65
APPROVAL [illegible] 10 Sep 65
NASA APPROVAL
MIT APPROVAL [illegible] 4 Nov 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

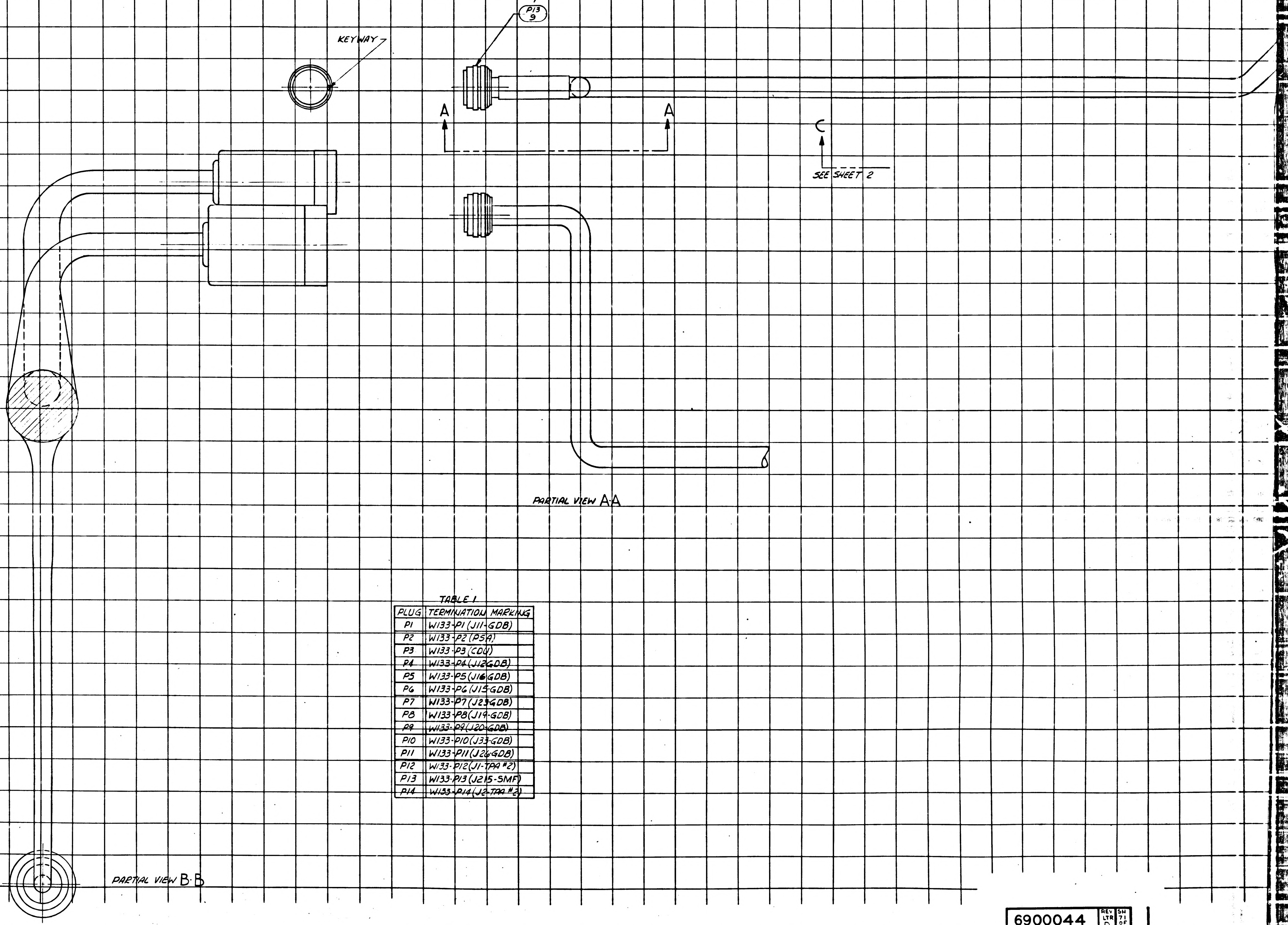
CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED
W133

CODE IDENT NO. 99974
SIZE J2
6900044
SCALE 1:1
SHEET 71 OF 72

6900044 REV LTR D SH 71 OF 72

2/6900044

SH 71 OF 72



KEYWAY
1
P13
9
A
A
C
SEE SHEET 2
PARTIAL VIEW A-A
PARTIAL VIEW B-B

TABLE 1

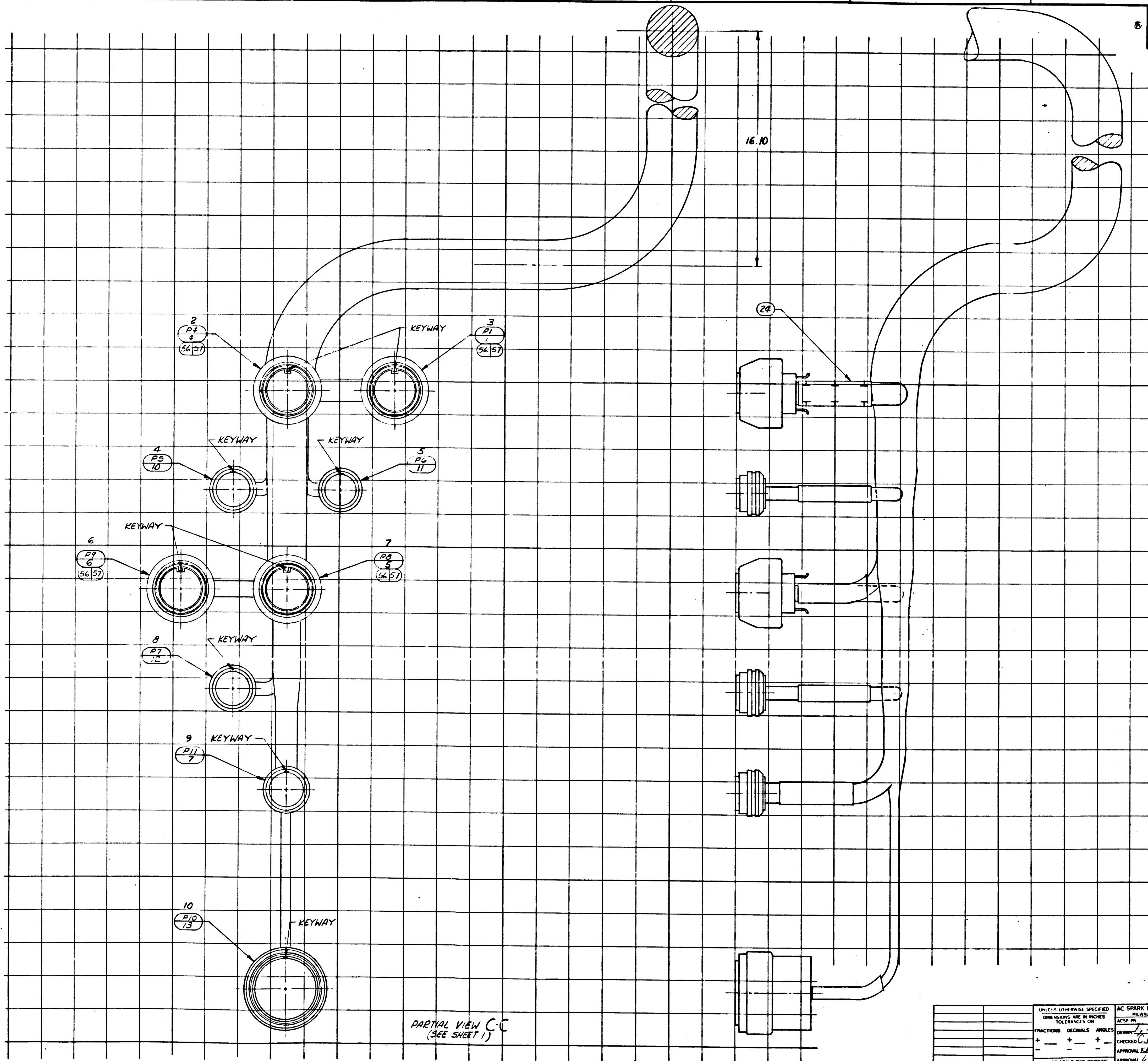
PLUG	TERMINATION MARKING
P1	W133-P1 (J11-GDB)
P2	W133-P2 (PSA)
P3	W133-P3 (CDU)
P4	W133-P4 (J12 GDB)
P5	W133-P5 (J16 GDB)
P6	W133-P6 (J15-GDB)
P7	W133-P7 (J23 GDB)
P8	W133-P8 (J19-GDB)
P9	W133-P9 (J20-GDB)
P10	W133-P10 (J33-GDB)
P11	W133-P11 (J26 GDB)
P12	W133-P12 (J1-TPA #2)
P13	W133-P13 (J215-SMF)
P14	W133-P14 (J2-TPA #2)

6900044 REV LTR D SH 71 OF 72

176900044

REVISIONS
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.

SEE SHEET I FOR REVISION RECORD


16.10
2
P4
4
56 57
KEYWAY
3
P1
1
56 57
KEYWAY
4
P5
10
KEYWAY
5
P6
11
KEYWAY
6
P9
6
56 57
7
P8
5
56 57
8
P7
12
KEYWAY
9
P11
7
KEYWAY
10
P10
13
KEYWAY
24

PARTIAL VIEW C-C
(SEE SHEET 1)

6900044D

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + _ − DECIMALS + _ − ANGLES + _ −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 9 AUG 65
CHECKED C. Pogoda 10 SEP 65
APPROVAL 11 SEP 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

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HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL BRANCHED
W133

CODE IDENT NO. 99974
SIZE E
6900044
SCALE 1:1
SHEET 72 OF 72

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	REPLACES REV(-) WITH CHANGE PER MXC 204908; WAS "C" SIZE WORD DRAWING	17SEP 65	PLG EF
		B	REVISED PER MXC-206061	19 OCT. 65	JWP EF
		Ⓜ C	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	RLP CW
		D	REVISED PER TDRR 24142	24 NOV 65	LK MEM
		E	REVISED PER TDRR 24173	29 NOV 65	RL EF

REV		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SHEET		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS	REV							E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
OF SHEETS	SHEET							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A.J. FLUDER DATE 19AUG65
CHECKED C. PIOJDA 10 SEP 65
APPROVAL R. PIERINI 10 SEP 65
APPROVAL Wedeman 4/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL W.K. 4/26/65
CONTRACT NAS9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY
SPECIAL PURPOSE
BRANCHED ELECTRICAL
W133

CODE IDENT NO. 99974
SIZE A
6900044
REV E
SCALE ——
SHEET 1 OF 72

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	D														
48	D														
49	D														
50	D														
51	D														
52	D														
53	D														
54	D														
55	D														
56	D														
57	E														
58	D														
59	D														
60	D														
61	D														
62	D														
63	E														
64	E														
65	D														
66	D														
67	D														
68	D														
69	D														
70	D														
71	D														
72	D														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION E

NASA DRAWING NO. 6900044
SHEET 2 OF 72

NOTE NUMBER | GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 LACE HARNESS USING ITEM 26.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019.

6 APPLY LEAD IDENTIFICATIONS PER ND 1002019.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 POSITION IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
A - FROM END SHIELD
B - TO END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER.
W - WHITE
Y - WHITE WITH YELLOW TRACER.

11 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

MANNED SPACECRAFT CENTER
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SCALE-NONE REV LTR ~~C~~ D SHEET 3 OF ~~71~~ 72

NOTE NUMBER | GENERAL NOTES DESCRIPTION

12 ITEMS 50 (13) AND ITEM 29 (85) SUPPLIED WITH ITEM 7.
ITEMS 50 (13) AND ITEM 30 (85) SUPPLIED WITH ITEMS 9, 10 AND 12.
ITEM 50(9) AND ITEM 29 (61) SUPPLIED WITH ITEM 11.

13 SECURE TO CABLE USING ITEM 26, MARKING TO READ AWAY FROM CONNECTOR. ALIGN CENTER LINE OF BAND AND OF ASSOCIATED CONNECTOR MASTER KEY SLOT TO BE COLINEAR WITHIN + OR -0.25 IN.

14 MARK IDENTIFICATION BANDS AS NOTED IN TABLE 1,.12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

15 FILL THE SPACE BETWEEN WIRE BUNDLE AND STRAIN RELIEF CLAMP USING ITEM 23 TO SECURE WIRE BUNDLE IN THE CLAMP.

16 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

~~17 GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING FURNISHED PLUGS ITEM 50.~~

18 SOLDER PER MIL-S-6872 (ES2505-1) USING ITEM 48 OR ITEMS 46 AND 47.

19 SERIALIZE PER ND1002023.

20 LEADS USE COMMON ACCESSORY

21 IN CIRCUIT POINT FIELD
I - INDICATES INNER LEAD
O - INDICATES OUTER LEAD

MANNED SPACECRAFT CENTER
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NOTE NUMBER | GENERAL NOTES DESCRIPTION

22 TYPICAL INSTALLATION OF CONTACTS AND ASSOCIATED HARDWARE---
ASSEMBLE ITEM 33 OVER BOTH LEADS (I AND O). ASSEMBLE ITEM 35, ITEM 34 OR 51, AND ITEM 32 OR 40 TO INNER LEAD IN ORDER LISTED. CRIMP ITEM 32 OR 40. ASSEMBLE ITEM 31 OR 41 TO ITEM 32 OR 40. SLIDE ITEM 35 OVER ITEM 31 OR 41 UNTIL SEATED. LAYOUTER LEAD AGAINST ITEM 31 OR 41 IN OPEN SECTION OF ITEM 35. SLIDE ITEM 33 FORWARD AGAINST SPRING AND CRIMP.

23 DELETED

~~24 ON COND A244 ONE ITEM 31 TO BE ADDED TO ACCESSORIES ON TO SIDE (PG 41/1).~~

25 ASSEMBLE PER ND1002032.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	1	1	1897215-004	CONNECTOR, PLUG ELEC.
	2	1	6900050-011	CONNECTOR, PLUG ELEC.
	3	1	2900714-011	CONNECTOR, PLUG ELEC.
8	4	1	1897215-005	CONNECTOR, PLUG ELEC.
8	5	1	1897215-003	CONNECTOR, PLUG ELEC.
8	6	1	1897215-013	CONNECTOR, PLUG ELEC.
8	7	1	1897250-001	CONNECTOR, PLUG ELEC.
8	8	1	1897215-011	CONNECTOR, PLUG ELEC.
8	9	1	1897249-204	CONNECTOR, PLUG ELEC.
8	10	1	1897249-001	CONNECTOR, PLUG ELEC.
8	11	1	1897250-006	CONNECTOR, PLUG ELEC.
8	12	1	1897249-004	CONNECTOR, PLUG ELEC.
8	13	1	1897232-231	CONNECTOR, PLUG ELEC.
	14	1	6900044-001	WIRE ND1002181 TYPE 1, CLASS 1, 24AWG, WHT. 100FT. TOTAL LENGTH
	15	1	6900044-002	WIRE ND1002181 TYPE 2, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU 411FT. TOTAL LENGTH
	16	1	6900044-003	WIRE ND1002181 TYPE 3, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU, WHT/YEL 24FT. TOTAL LENGTH

MANNED SPACECRAFT CENTER
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6900044
SCALE-NONE REV LTR ~~C~~ D SHEET 6 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900044-004	WIRE ND1002181, TYPE 1, CLASS 1, 22AWG, WHT. 136FT. TOTAL LENGTH
	18	1	6900044-005	WIRE ND1002181 TYPE 1, CLASS 1, 16AWG, WHT 44FT TOTAL LENGTH
8	19	179	1010763- 2	SOLDER SLEEVE
8	20	298	1010490-228	INSULATION SLEEVING
8	21	7	1016006-002	SPLICE REDUCER
8	22	7	1010490-258	INSULATION SLEEVING
	23	AR	1901390	FILLER TAPE
8	24	14	1016128-041	BAND IDENTIFICATION
8	25	1	1016128-011	BAND IDENTIFICATION
	26	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2 BLACK (ES2732 NO. 18)
	27	1	6900044-006	WIRE ND1002181, TYPE 2, CLASS 4, WHT. JKT. 24AWG WHT/RED, WHT/BLU 344FT. TOTAL LENGTH
8	28	344	1897300-001	CONTACT SPRING CLIP
8	29		1897190- 1	CONTACT PIN
8	30		1897190- 2	CONTACT SOCKET
8	31	47 ~~48~~	1016369-288	CONTACT OUTER MALE
8	32	49 ~~50~~	1016369-388	CONTACT INNER FEMALE

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6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 7 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	33	108 ~~100~~	1016369-588	HYRING
8	34	48 ~~47~~	1016369-712	SLEEVE INNER
8	35	106 ~~105~~	1016369-713	SLEEVE OUTER
8	36	1	1016369-721	CONTACT FEMALE
8	37	3	1016369-421	CONTACT FEMALE
8	38	32 ~~31~~	1016369-420	CONTACT MALE
8	39	8	1016369-720	CONTACT MALE
8	40	60 ~~58~~	1016369-188	CONTACT INNER MALE
8	41	59 ~~57~~	1016369-488	CONTACT OUTER FEMALE
8	42	4	1010933-105	STRAIN RELIEF CLAMP
8	43	1	1010933-104	STRAIN RELIEF CLAMP
	44	1	6900044-007	WIRE ND1002181 TYPE 3, CLASS 4 WHT JKT 24AWG, WHT/RED, WHT/BLU, WHT/YEL, 11FT. TOTAL LENGTH
	45	1	6900044-008	WIRE ND1002181 TYPE 1, CLASS 4, WHT JKT 24AWG, WHT, 43FT. TOTAL LENGTH
	46	AR	SN60WS	SOLDER QQ-S-571(ES2175-1)
	47	AR	MIL-F-14256 TYPE A OR W	FLUX(ES2798)
	48	AR	SN60WRAP	SOLDER QQ-S-571(ES2175-3)
8	49	12	1010763- 1	SOLDER SLEEVE

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NC.	DESCRIPTION
~~8~~	~~50~~	~~166~~	~~[illegible]~~	~~SEALING PLUG~~
8	51	57	1016369-711	SLEEVE INNER
8	52	1	1897215-012	CONNECTOR, PLUG ELEC.
	53	1	6900044-009	WIRE ND1002181 TYPE 2, CLASS 4, WHT JKT 16AWG WHT/RED WHT/BLU 6FT. TOTAL LENGTH
8	54	2	1016006-004	SPLICE REDUCER
8	55	2	1010490-284	INSULATION SLEEVING
8	56	6	1897331-001	ADAPTER, CABLE CLAMP
8	57	6	1897330-001	CLAMP, CABLE -
8	58	22	1010490-232	INSULATION SLEEVING
8	59	2	1010490-226	INSULATION SLEEVING

MANNED SPACECRAFT CENTER
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6900044
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SHEET 9 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTES 9, 22
A	1A	17		SHLD A1 P3-340	 12				.25 .18	NO NO		 28	
A	1B	14		P4-2/0 SHLD A1	2				.23 .25	NO NO		31, 33	
A	1L			P3-240 P4-3/0	12 2			 .32	.18 .23	NO NO		28 31	
A	1R			P3-140 P4-3/1	12 2				.18 .21	NO NO		28 32, 34, 35	
A	2	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	2A	17		SHLD A2 P3-640	 12				.25 .18	NO NO		 28	
A	2B	14		P4-2/1 SHLD A2	2				.21 .25	NO NO		32, 34, 35	
A	2L			P3-540 P4-1/0	12 2			 .32	.18 .23	NO NO		28 31	
A	2R			P3-440 P4-1/1	12 2				.18 .21	NO NO		28 32, 34, 35	
A	3	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	3A	17		SHLD A3 P3-341	 12				.25 .18	NO NO		 28	

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6900044
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CABLE ASSEMBLY W133 6900044 ¥40

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	14		P4-11/O SHLD A3	2				.23 .25	NO NO		31, 33	
A 3L			P3-241 P4-12/O	12 2			 .32	.18 .23	NO NO		28 31	
A 3R			P3-141 P4-12/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 4	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 4A	17		SHLD A4 P3-641	 12				.25 .18	NO NO		 28	
A 4B	14		P4-11/I SHLD A4	2				.21 .25	NO NO		32, 34, 35	
A 4L			P3-541 P4-10/O	12 2			 .32	.18 .23	NO NO		28 31	
A 4R			P3-441 P4-10/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 5	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 5A	17		SHLD A5 P3-342	 12				.25 .18	NO NO		 28	
A 5B	14		P4-5/O SHLD A5	2				.23 .25	NO NO		31, 33	
A 5L			P3-242 P4-6/O	12 2			 .32	.18 .21	NO NO		28 31	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE | REV LTR ¥40 | SHEET 11 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ¥40

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 5R			P3-142 P4-6/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 6	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 6A	17		SHLD A6 P3-642	 12				.25 .18	NO NO		 28	
A 6B	14		P4-5/I SHLD A6	2				.21 .25	NO NO		32, 34, 35	
A 6L			P3-542 P4-4/O	12 2			 .32	.18 .23	NO NO		28 31	
A 6R			P3-442 P4-4/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 7	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 7A	17		SHLD A7 P3-343	 12				.25 .18	NO NO		 28	
A 7B	14		P4-14/O SHLD A7	2				.23 .25	NO NO		31, 33	
A 7L			P3-243 P4-15/O	12 2			 .32	.18 .23	NO NO		28 31	
A 7R			P3-143 P4-15/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 8	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE | REV LTR ¥40 | SHEET 12 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ¥40

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 8A	17		SHLD A8 P3-643	 12				.25 .18	NO NO		 28	
A 8B	14		P4-14/I SHLD A8	2				.21 .25	NO NO		32, 34, 35	
A 8L			P3-543 P4-13/O	12 2			 .32	.18 .23	NO NO		28 31	
A 8R			P3-443 P4-13/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 9	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 9A	17		SHLD A9 P3-344	 12				.25 .18	NO NO		 28	
A 9B	14		P4-8/O SHLD A9	2				.23 .25	NO NO		31, 33	
A 9L			P3-244 P4-9/O	12 2			 .32	.18 .23	NO NO		28 31	
A 9R			P3-144 P4-9/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 10	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 10A	17		SHLD A10 P3-644	 12				.25 .18	NO NO		 28	
A 10B	14		P4-8/I SHLD A10	2				.21 .25	NO NO		32, 34, 35	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE | REV LTR ¥40 | SHEET 13 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ¥40

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10L			P3-544 P4-7/O	12 2			 .32	.18 .23	NO NO		28 31	
A 10R			P3-444 P4-7/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 11	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 11A	17		SHLD A11 P3-345	 12				.25 .18	NO NO		 28	
A 11B	14		P4-17/O SHLD A11	2				.23 .25	NO NO		31, 33	
A 11L			P3-245 P4-18/O	12 2			 .32	.18 .23	NO NO		28 31	
A 11R			P3-145 P4-18/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 12	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 12A	17		SHLD A12 P3-645	 12				.25 .18	NO NO		 28	
A 12B	14		P4-17/I SHLD A12	2				.21 .25	NO NO		32, 34, 35	
A 12L			P3-545 P4-16/O	12 2			 .32	.18 .23	NO NO		28 31	
A 12R			P3-445 P4-16/I	12 2				.18 .21	NO NO		28 32, 34, 35	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

6900044

SCALE - NONE | REV LTR ¥40 | SHEET 14 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 13A	17		SHLD A13 P3-346	12				.25 .18	NO NO		28	SEE NOTE 20
A 13B	17		P5-15 SHLD A13	4				.15 .25	NO NO		30	
A 13L			P3-246 P5-14	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 13R			P3-146 P5-13	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 14	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 14A	17		SHLD A14 P3-646	12				.25 .18	NO NO		28	SEE NOTE 20
A 14B	17		P5-18 SHLD A14	4				.15 .25	NO NO		30	
A 14L			P3-546 P5-17	12 4				.19 .15	NO NO		28 30	SEE NOTE 20
A 14R			P3-446 P5-16	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 15	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 15A	17		SHLD A15 P3-347	12				.25 .18	NO NO		28	SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 15 OF ~~71~~ 72	

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15B	17		P5-3 SHLD A15	4				.15 .25	NO NO		30	
A 15L			P3-247 P5-2	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 15R			P3-147 P5-1	12 4				.18 .15	NO NO		28 30	
A 16	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 16A	17		SHLD A16 P3-647	12				.25 .18	NO NO		28	SEE NOTE 20
A 16B	17		P5-6 SHLD A16	4				.15 .25	NO NO		30	
A 16L			P3-547 P5-5	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 16R			P3-447 P5-4	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 17	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 17A	17		SHLD A17 P3-348	12				.25 .18	NO NO		28	SEE NOTE 20
A 17B	17		P5-21 SHLD A17	4				.15 .25	NO NO		30	
A 17L			P3-248 P5-20	12 4				.18 .15	NO NO		28 30	SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 16 OF ~~71~~ 72	

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17R			P3-148 P5-19	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 18	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 18A	17		SHLD A18 P3-648	12				.25 .18	NO NO		28	SEE NOTE 20
A 18B	17		P5-24 SHLD A18	4				.15 .25	NO NO		30	
A 18L			P3-548 P5-23	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 18R			P3-448 P5-22	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 19	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 19A	17		SHLD A19 P3-349	12				.25 .18	NO NO		28	SEE NOTE 20
A 19B	17		P5-9 SHLD A19	4				.15 .25	NO NO		30	
A 19L			P3-249 P5-8	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 19R			P3-149 P5-7	12 4				.18 .15	NO NO		28 30	SEE NOTE 20
A 20	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 17 OF ~~71~~ 72	

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 20L			P2-K 1 P3-528	15 12				.18 .18	NO NO		28 28	
A 20R			P2-H11 P3-428	15 12				.18 .18	NO NO		28 28	
A 21	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	
A 21L			P2-K10 P3-328	15 12				.18 .18	NO NO		28 28	
A 21R			P2-H10 P3-228	15 12				.18 .18	NO NO		28 28	
A 22	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 22A	17		SHLD A22 P2-B33	15				.25 .18	NO NO		28	
A 22B	17		P3-329 SHLD A22	12				.18 .25	NO NO		28	
A 22L			P2-B34 P3-229	15 12				.18 .18	NO NO		28 28	
A 22R			P2-B35 P3-129	15 12				.18 .18	NO NO		28 28	
A 23	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 23A	17		SHLD A23 P2-D33	15				.25 .18	NO NO		28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 18 OF ~~71~~ 72	

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23B	17		P3-629 SHLD A23	12				.18 .25	NO NO		28	
A 23L			P2-D34 P3-529	15 12				.18 .18	NO NO		28 28	
A 23R			P2-D35 P3-429	15 12				.18 .18	NO NO		28 28	
A 24	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 24A	17		SHLD A24 P2-G33	 15				.25 .18	NO NO		 28	
A 24B	17		P3-330 SHLD A24	12				.18 .25	NO NO		28	
A 24L			P2-G34 P3-230	15 12				.18 .18	NO NO		28 28	
A 24R			P2-G35 P3-130	15 12				.18 .18	NO NO		28 28	
A 25	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 25A	17		SHLD A25 P2-C33	 15				.25 .18	NO NO		 28	
A 25B	17		P3-630 SHLD A25	12				.18 .25	NO NO		28	
A 25L			P2-C34 P3-530	15 12				.18 .18	NO NO		28 28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D		SHEET 19 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P2-C35 P3-430	15 12				.18 .18	NO NO		28 28	
A 26	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 26A	17		SHLD A26 P2-F33	 15				.25 .18	NO NO		 28	
A 26B	17		P3-331 SHLD A26	12				.18 .25	NO NO		28	
A 26L			P2-F34 P3-231	15 12				.18 .18	NO NO		28 28	
A 26R			P2-F35 P3-131	15 12				.18 .18	NO NO		28 28	
A 27	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 27A	17		SHLD A27 P2-H33	 15				.25 .18	NO NO		 28	
A 27B	17		P3-631 SHLD A27	12				.18 .25	NO NO		28	
A 27L			P2-H34 P3-531	15 12				.18 .18	NO NO		28 28	
A 27R			P2-H35 P3-431	15 12				.18 .18	NO NO		28 28	
A 28	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D		SHEET 20 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 28A	17		SHLD A28 E4	 22				.25 .38	NO NO			
A 28B	17		P5-33 SHLD A28	4				.15 .25	NO NO		30	
A 28L			P3-232 P5-32	12 4				.18 .15	NO NO		28 30	
A 28R			P3-132 P5-31	12 4				.18 .15	NO NO		28 30	
A 29	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 29A	17		SHLD A29 E4	 22				.25 .38	NO NO			
A 29B	17		P5-30 SHLD A29	4				.15 .25	NO NO		30	
A 29L			P3-532 P5-29	12 4				.18 .15	NO NO		28 30	
A 29R			P3-432 P5-28	12 4				.18 .15	NO NO		28 30	
A 31	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 31A	17		SHLD A31 E4	 22				.25 .38	NO NO			
A 31B	17		P5-36 SHLD A31	4				.15 .25	NO NO		30	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D		SHEET 21 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31L			P3-533 P5-35	12 4				.18 .15	NO NO		28 30	
A 31R			P3-433 P5-34	12 4				.18 .15	NO NO		28 30	
A 32	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 32A	17		SHLD A32 E4	 22				.25 .38	NO NO			
A 32B	17		P5-39 SHLD A32	4				.15 .25	NO NO		30	
A 32L			P3-234 P5-38	12 4				.18 .15	NO NO		28 30	
A 32R			P3-134 P5-37	12 4				.18 .15	NO NO		28 30	
A 33	17		P2-H8 P3-136	15 12				.18 .18	NO NO		28 28	
A 34	17		P2-K10 P3-336	15 12				.18 .18	NO NO		28 28	
A 35	14		P3-113 P9-37/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 36	14		P3-612 P9-37/O	12 6				.18 .23	NO NO		28 41, 33	
A 37	17		P3-512 P9-38	12 6				.18 .21	NO NO		28 37	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044	
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D		SHEET 22 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~C~~D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	38	14		P3-412 P9-36/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	39	14		P3-312 P9-36/O	12 6				.18 .23	NO NO		28 41, 33	
A	40	17		P3-112 P9-52	12 6				.18 .21	NO NO		28 37	
A	41	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	41A	17		SHLD A41 P3-111	 12				.25 .18	NO NO		 28	
A	41B	17		P9-32 SHLD A41	6				.21 .25	NO NO		37	
A	41L			P3-211 P9-31/O	12 6			 .22	.18 .23	NO NO		28 41	
A	41R			P3-311 P9-31/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	42	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	42A	17		SHLD A42 P3-410	 12				.25 .18	NO NO		 28	
A	42B	14		P9-2/I SHLD A42	6				.21 .25	NO NO		40, 51, 35	
A	42L			P3-510 P9-1/O	12 6			 .22	.18 .23	NO NO		28 41	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 23 OF ~~71~~ 72

MIL 2064 4-63

CABLE ASSEMBLY W133 6900044 ~~C~~D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	42R			P3-610 P9-1/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	43	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	43A	17		SHLD A43 P3-110	 12				.25 .18	NO NO		 28	
A	43B	14		P9-2/O SHLD A43	6				.23 .25	NO NO		41, 33	
A	43L			P3-210 P9-3/O	12 6			 .22	.18 .23	NO NO		28 41	
A	43R			P3-310 P9-3/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	44	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	44A	17		SHLD A44 P3-409	 12				.25 .18	NO NO		 28	
A	44B	14		P9-5/I SHLD A44	6				.21 .25	NO NO		40, 51, 35	
A	44L			P3-509 P9-4/O	12 6			 .22	.18 .23	NO NO		28 41	
A	44R			P3-609 P9-4/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	45	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 24 OF ~~71~~ 72

MIL 2064 4-63

CABLE ASSEMBLY W133 6900044 ~~C~~D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	45A	17		SHLD A45 P3-109	 12				.25 .18	NO NO		 28	
A	45B	14		P9-5/O SHLD A45	6				.23 .25	NO NO		41, 33	
A	45L			P3-209 P9-6/O	12 6			 .22	.18 .23	NO NO		28 41	
A	45R			P3-309 P9-6/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	46	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	46A	17		SHLD A46 P3-408	 12				.25 .18	NO NO		 28	
A	46B	14		P9-8/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A	46L			P3-508 P9-7/O	12 6			 .22	.18 .23	NO NO		28 41	
A	46R			P3-608 P9-7/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	47	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	47A	17		SHLD A47 P3-108	 12				.25 .18	NO NO		 28	
A	47B	14		P9-8/O SHLD A47	6				.23 .25	NO NO		41, 33	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 25 OF ~~71~~ 72

MIL 2064 4-63

CABLE ASSEMBLY W133 6900044 ~~C~~D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	47L			P3-208 P9-9/O	12 6			 .22	.18 .23	NO NO		28 41	
A	47R			P3-308 P9-9/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	48	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	48A	17		SHLD A48 P3-407	 12				.25 .18	NO NO		 28	
A	48B	14		P9-11/I SHLD A48	6				.21 .25	NO NO		40, 51, 35	
A	48L			P3-507 P9-10/O	12 6			 .22	.18 .23	NO NO		28 41	
A	48R			P3-607 P9-10/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	49	27				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	49A	17		SHLD A49 P3-107	 12				.25 .18	NO NO		 28	
A	49B	14		P9-11/O SHLD A49	6				.23 .25	NO NO		41, 33	
A	49L			P3-207 P9-12/O	12 6			 .22	.18 .23	NO NO		28 41	
A	49R			P3-307 P9-12/I	12 6				.18 .21	NO NO		28 40, 51, 35	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 26 OF ~~71~~ 72

MIL 2064 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~Ø0

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	50	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	50A	17	SHLD A50 P3-406	 12				.25 .18	NO NO		 28	
A	50B	14	P9-14/I SHLD A50	6 				.21 .25	NO NO		40, 51, 35	
A	50L		P3-506 P9-13/O	12 6			 .22	.18 .23	NO NO		28 41	
A	50R		P3-606 P9-13/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	51	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	51A	17	SHLD A51 P3-106	 12				.25 .18	NO NO		 28	
A	51B	14	P9-14/O SHLD A51	6 				.23 .25	NO NO		41, 33	
A	51L		P3-206 P9-15/O	12 6			 .22	.18 .23	NO NO		28 41	
A	51R		P3-306 P9-15/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	52	14	P3-213 P9-39/O	12 6				.18 .23	NO NO		28 41, 33	
A	53	14	P3-313 P9-39/I	12 6				.18 .21	NO NO		28 40, 51, 35	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~Ø0
SHEET 27 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~Ø0

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	54	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	54A	17	SHLD A54 P3-405	 12				.25 .18	NO NO		 28	
A	54B	14	P9-17/I SHLD A54	6 				.21 .25	NO NO		40, 51, 35	
A	54L		P3-505 P9-16/O	12 6			 .22	.18 .23	NO NO		28 41	
A	54R		P3-605 P9-16/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	55	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	55A	17	SHLD A55 P3-105	 12				.25 .18	NO NO		 28	
A	55B	14	P9-17/O SHLD A55	6 				.23 .25	NO NO		41, 33	
A	55L		P3-205 P9-18/O	12 6			 .22	.18 .23	NO NO		28 41	
A	55R		P3-305 P9-18/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	56	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	56A	17	SHLD A56 P3-404	 12				.25 .18	NO NO		 28	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~Ø0
SHEET 28 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~Ø0

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	56B	14	P9-20/I SHLD A56	6 				.21 .25	NO NO		40, 51, 35	
A	56L		P3-504 P9-19/O	12 6			 .22	.18 .23	NO NO		28 41	
A	56R		P3-604 P9-19/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	57	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	57A	17	SHLD A57 P3-104	 12				.25 .18	NO NO		 28	
A	57B	14	P9-20/O SHLD A57	6 				.23 .25	NO NO		41, 33	
A	57L		P3-204 P9-21/O	12 6			 .22	.18 .23	NO NO		28 41	
A	57R		P3-304 P9-21/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	58	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	58A	17	SHLD A58 P3-403	 12				.25 .18	NO NO		 28	
A	58B	14	P9-23/I SHLD A58	6 				.21 .25	NO NO		40, 51, 35	
A	58L		P3-503 P9-22/O	12 6			 .22	.18 .23	NO NO		28 41	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~Ø0
SHEET 29 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~Ø0

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	58R		P3-603 P9-22/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	59	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	59A	17	SHLD A59 P3-103	 12				.25 .18	NO NO		 28	
A	59B	14	P9-23/O SHLD A59	6 				.23 .25	NO NO		41, 33	
A	59L		P3-203 P9-24/O	12 6			 .22	.18 .23	NO NO		28 41	
A	59R		P3-303 P9-24/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	60	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	6CA	17	SHLD A60 P3-402	 12				.25 .18	NO NO		 28	
A	60B	14	P9-26/I SHLD A60	6 				.21 .25	NO NO		40, 51, 35	
A	60L		P3-502 P9-25/O	12 6			 .22	.18 .23	NO NO		28 41	
A	60R		P3-602 P9-25/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	61	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~Ø0
SHEET 30 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	61A	17		SHLD A61					.25	NO			
				P3-102	12				.18	NO		28	
A	61B	14		P9-26/0	6				.23	NO		41, 33	
				SHLD A61					.25	NO			
A	61L			P3-202	12				.18	NO		28	
				P9-27/0	6			.22	.23	NO		41	
A	61R			P3-302	12				.18	NO		28	
				P9-27/I	6				.21	NO		40, 51, 35	
A	62	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	62A	17		SHLD A62					.25	NO			
				P3-401	12				.18	NO		28	
A	62B	14		P9-29/I	6				.21	NO		40, 51, 35	
				SHLD A62					.25	NO			
A	62L			P3-501	12				.18	NO		28	
				P9-28/0	6			.22	.23	NO		41	
A	62R			P3-601	12				.18	NO		28	
				P9-28/I	6				.21	NO		40, 51, 35	
A	63	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	63A	17		SHLD A63					.25	NO			
				P3-101	12				.18	NO		28	
A	63B	14		P9-29/0	6				.23	NO		41, 33	
				SHLD A63					.25	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 31 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	63L			P3-201	12				.18	NO		28	
				P9-30/0	6			.22	.23	NO		41	
A	63R			P3-301	12				.18	NO		28	
				P9-30/I	6				.21	NO		40, 51, 35	
A	64	15				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	64A	17		SHLD A64					.25	NO			SEE NOTE 20
				P3-649	12				.18	NO		28	SEE NOTE 20
A	64B	17		P5-12	4				.15	NO		30	
				SHLD A64					.25	NO			
A	64L			P3-549	12				.18	NO		28	SEE NOTE 20
				P5-11	4				.15	NO		30	
A	64R			P3-449	12				.18	NO		28	SEE NOTE 20
				P5-10	4				.15	NO		30	
A	65	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	65A	17		SHLD A65					.25	NO			
				E4	22				.38	NO			
A	65B	17		P6-18	5				.15	NO		29	
				SHLD A65					.25	NO			
A	65L			P3-215	12				.18	NO		28	
				P6-36	5				.15	NO		29	
A	65R			P3-115	12				.18	NO		28	
				P6-19	5				.15	NO		29	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 32 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	66	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	66A	17		SHLD A66					.25	NO			
				E4	22				.38	NO			
A	66B	17		P6-15	5				.15	NO		29	
				SHLD A66					.25	NO			
A	66L			P3-415	12				.18	NO		28	
				P6-31	5				.15	NO		29	
A	66R			P3-315	12				.18	NO		28	
				P6-30	5				.15	NO		29	
A	67	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	67A	17		SHLD A67					.25	NO			
				E4	22				.38	NO			
A	67B	17		P6-1	5				.15	NO		29	
				SHLD A67					.25	NO			
A	67L			P3-615	12				.18	NO		28	
				P6-5	5				.15	NO		29	
A	67R			P3-515	12				.18	NO		28	
				P6-4	5				.15	NO		29	
A	68	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	68A	17		SHLD A68					.25	NO			
				E4	22				.38	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 33 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	68B	17		P6-26	5				.15	NO		29	
				SHLD A68					.25	NO			
A	68L			P3-216	12				.18	NO		28	
				P6-11	5				.15	NO		29	
A	68R			P3-116	12				.18	NO		28	
				P6-25	5				.15	NO		29	
A	69	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	69A	17		SHLD A69					.25	NO			
				E4	22				.38	NO			
A	69B	17		P6-16	5				.15	NO		29	
				SHLD A69					.25	NO			
A	69L			P3-416	12				.18	NO		28	
				P6-33	5				.15	NO		29	
A	69R			P3-316	12				.18	NO		28	
				P6-17	5				.15	NO		29	
A	70	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	70A	17		SHLD A70					.25	NO			
				E4	22				.38	NO			
A	70B	17		P6-13	5				.15	NO		29	
				SHLD A70					.25	NO			
A	70L			P3-616	12				.18	NO		28	
				P6-28	5				.15	NO		29	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 34 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	70R			P3-516 P6-27	12 5				.18 .15	NO NO		28 29	
A	71	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	71A	17		SHLD A71 E4	 22				.25 .38	NO NO			
A	71B	17		P6-9 SHLD A71	5				.15 .25	NO NO		29	
A	71L			P3-217 P6-23	12 5				.18 .15	NO NO		28 29	
A	71R			P3-117 P6-22	12 5				.18 .15	NO NO		28 29	
A	72	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	72A	17		SHLD A72 P7-17	 8				.25 .15	NO NO		 30	
A	72B	17		P13-17 SHLD A72	1				.15 .25	NO NO		30	
A	72L			P7-33 P13-33	8 1				.15 .15	NO NO		30 30	
A	72R			P7-16 P13-16	8 1				.15 .15	NO NO		30 30	
A	73	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 35 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	73A	17		SHLD A73 P7-9	 8				.25 .15	NO NO		 30	
A	73B	17		P13-9 SHLD A73	1				.15 .25	NO NO		30	
A	73L			P7-21 P13-21	8 1				.15 .15	NO NO		30 30	
A	73R			P7-22 P13-22	8 1				.15 .15	NO NO		30 30	
A	74	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	74A	17		SHLD A74 P7-24	 8				.25 .15	NO NO		 30	
A	74B	17		P13-24 SHLD A74	1				.15 .25	NO NO		30	
A	74L			P7-23 P13-23	8 1				.15 .15	NO NO		30 30	
A	74R			P7-10 P13-10	8 1				.15 .15	NO NO		30 30	
A	75	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	75A	17		SHLD A75 P7-26	 8				.25 .15	NO NO		 30	
A	75B	17		P13-26 SHLD A75	1				.15 .25	NO NO		30	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 36 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	75L			P7-25 P13-25	8 1				.15 .15	NO NO		30 30	
A	75R			P7-11 P13-11	8 1				.15 .15	NO NO		30 30	
A	76	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	76A	17		SHLD A76 P7-13	 8				.25 .15	NO NO		 30	
A	76B	17		P13-13 SHLD A76	1				.15 .25	NO NO		30	
A	76L			P7-27 P13-27	8 1				.15 .15	NO NO		30 30	
A	76R			P7-12 P13-12	8 1				.15 .15	NO NO		30 30	
A	77	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	77A	17		SHLD A77 P7-30	 8				.25 .15	NO NO		 30	
A	77B	17		P13-30 SHLD A77	1				.15 .25	NO NO		30	
A	77L			P7-29 P13-29	8 1				.15 .15	NO NO		30 30	
A	77R			P7-14 P13-14	8 1				.15 .15	NO NO		30 30	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 37 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	78	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	
A	78A	17		SHLD A78 P7-32	 8				.25 .15	NO NO		 30	
A	78B	17		P13-32 SHLD A78	1				.15 .25	NO NO		30	
A	78L			P7-31 P13-31	8 1				.15 .15	NO NO		30 30	
A	78R			P7-15 P13-15	8 1				.15 .15	NO NO		30 30	
A	79	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A	79A	14		SHLD A79 P8-25/I	 7				.25 .21	NO NO		 32, 34, 35	
A	79B	17		P13-38 SHLD A79	1				.15 .25	NO NO		30	
A	79L			P8-24/0 P13-62	7 1			.32	.23 .15	NO NO		31 30	
A	79R			P8-24/I P13-63	7 1				.21 .15	NO NO		32, 34, 35 30	
A	80	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	80L			P11-30 P13-56	9 1				.15 .15	NO NO		29 30	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 38 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 80R			P11-29 P13-81	9 1				.15 .15	NO NO		29 30	
A 81	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 81L			P11-2 P13-1	9 1				.15 .15	NO NO		29 30	
A 81R			P11-1 P13-2	9 1				.15 .15	NO NO		29 30	
A 82	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 82L			P11-4 P13-4	9 1				.15 .15	NO NO		29 30	
A 82R			P11-3 P13-3	9 1				.15 .15	NO NO		29 30	
A 83	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 83L			P11-6 P13-6	9 1				.15 .15	NO NO		29 30	
A 83R			P11-5 P13-5	9 1				.15 .15	NO NO		29 30	
A 84	15				2.80 2.80	2.50 2.50				A,6B A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 84A	17		SHLD A84 P7-36	 8				.25 .15	NO NO		 30	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 39 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 84B	17		P13-36 SHLD A84	1				.15 .25	NO NO		30	
A 84L			P7-35 P13-35	8 1				.15 .15	NO NO		30 30	
A 84R			P7-18 P13-18	8 1				.15 .15	NO NO		30 30	
A 85	15				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 85A	17		SHLD A85 P7-20	 8				.25 .15	NO NO		 30	
A 85B	17		P13-20 SHLD A85	1				.15 .25	NO NO		30	
A 85L			P7-37 P13-37	8 1				.15 .15	NO NO		30 30	
A 85R			P7-19 P13-19	8 1				.15 .15	NO NO		30 30	
A 86	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 86L			P11-38 P13-61	9 1				.15 .15	NO NO		29 30	
A 86R			P11-37 P13-85	9 1				.15 .15	NO NO		29 30	
A 87	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 40 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87L			P11-40 P13-59	9 1				.15 .15	NO NO		29 30	
A 87R			P11-39 P13-84	9 1				.15 .15	NO NO		29 30	
A 88	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 88L			P11-42 P13-58	9 1				.15 .15	NO NO		29 30	
A 88R			P11-41 P13-82	9 1				.15 .15	NO NO		29 30	
A 89	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 89A	14		SHLD A89 P8-11/I	 7				.25 .21	NO NO		 32, 34, 35	
A 89B	17		P13-42 SHLD A89	1				.15 .25	NO NO		30	
A 89L			P8-10/O P13-66	7 1			.32	.23 .15	NO NO		31 30	
A 89R			P8-10/I P13-41	7 1				.21 .15	NO NO		32, 34, 35 30	
A 90	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 90A	14		SHLD A90 P8-8/O	 7				.25 .23	NO NO		 31, 33	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 41 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 90B	17		P13-71 SHLD A90	1				.15 .25	NO NO		30	
A 90L			P8-9/O P13-70	7 1			.32	.23 .15	NO NO		31 30	
A 90R			P8-9/I P13-46	7 1				.21 .15	NO NO		32, 34, 35 30	
A 91	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 91A	14		SHLD A91 P8-8/I	 7				.25 .21	NO NO		 32, 34, 35	
A 91B	17		P13-47 SHLD A91	1				.15 .25	NO NO		30	
A 91L			P8-7/O P13-48	7 1			.32	.23 .15	NO NO		31 30	
A 91R			P8-7/I P13-72	7 1				.21 .15	NO NO		32, 34, 35 30	
A 92	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 92A	14		SHLD A92 P8-5/O	 7				.25 .23	NO NO		 31, 33	
A 92B	17		P13-80 SHLD A92	1				.15 .25	NO NO		30	
A 92L			P8-6/O P13-79	7 1			.32	.23 .15	NO NO		31 30	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 42 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 X ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 92R			P8-6/I	7				.21	NO		32, 34, 35	
			P13-55	1				.15	NO		30	
A 93	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
					2.80	2.50				A,6B	19, 20	SEE NOTE 9
A 93A	14		SHLD A93					.25	NO			
			P8-5/I	7				.21	NO		32, 34, 35	
A 93B	17		P13-40	1				.15	NO		30	
			SHLD A93					.25	NO			
A 93L			P8-4/0	7			.32	.23	NO		31	
			P13-65	1				.15	NO		30	
A 93R			P8-4/I	7				.21	NO		32, 34, 35	
			P13-64	1				.15	NO		30	
A 94	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
					2.80	2.50				A,6B	19, 20	SEE NOTE 9
A 94A	14		SHLD A94					.25	NO			
			P8-2/0	7				.23	NO		31, 33	
A 94B	17		P13-52	1				.15	NO		30	
			SHLD A94					.25	NO			
A 94L			P8-3/0	7			.32	.23	NO		31	
			P13-76	1				.15	NO		30	
A 94R			P8-3/I	7				.21	NO		32, 34, 35	
			P13-77	1				.15	NO		30	
A 95	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
					3.30	3.00				A,6B	19, 20	SEE NOTE 9

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CABLE ASSEMBLY W133 6900044 X ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95A	14		SHLD A95					.25	NO			
			P8-2/I	7				.21	NO		32, 34, 35	
A 95B	17		P13-54	1				.15	NO		30	
			SHLD A95					.25	NO			
A 95L			P8-1/0	7			.32	.23	NO		31	
			P13-78	1				.15	NO		30	
A 95R			P8-1/I	7				.21	NO		32, 34, 35	
			P13-53	1				.15	NO		30	
A 96	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
					3.30	3.00				A,6B	19, 20	SEE NOTE 9
A 96A	14		SHLD A96					.25	NO			
			P8-11/0	7				.23	NO		31, 33	
A 96B	17		P13-68	1				.15	NO		30	
			SHLD A96					.25	NO			
A 96L			P8-12/0	7			.32	.23	NO		31	
			P13-67	1				.15	NO		30	
A 96R			P8-12/I	7				.21	NO		32, 34, 35	
			P13-43	1				.15	NO		30	
A 97	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
					3.30	3.00				A,6B	19, 20	SEE NOTE 9
A 97A	17		SHLD A97					.25	NO			
			P8-14	7				.18	NO		38	
A 97B	17		P13-45	1				.15	NO		30	
			SHLD A97					.25	NO			

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97L			P8-13/0	7			.32	.23	NO		31	
			P13-69	1				.15	NO		30	
A 97R			P8-13/I	7				.21	NO		32, 34, 35	
			P13-44	1				.15	NO		30	
A 98	14		P2-G19	15				.18	NO		28	
			P8-42/I	7				.21	NO		32, 33	
A 99	27				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20	
A 99L			P2-A25	15				.18	NO		28	
			P4-23/0	2			.32	.23	NO		31, 33	
A 99R			P2-A24	15				.18	NO		28	
			P4-23/I	2				.21	NO		32, 34, 35	
A 100	27				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20, 33	
A 100L			P2-K30	15				.18	NO		28	
			P4-26/I	2				.21	NO		32, 34, 35	
A 100R			P2-K31	15				.18	NO		28	
			P4-26/0	2			.32	.23	NO		31	
A 102	15				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20	
A 102L			P2-K7	15				.18	NO		28	
			P1-30	3				.18	NO		38	
A 102R			P2-K6	15				.18	NO		28	
			P1-29	3				.18	NO		38	

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	15				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20	
A 103L			P2-D7	15				.18	NO		28	
			P1-23	3				.18	NO		38	
A 103R			P2-D6	15				.18	NO		28	
			P1-22	3				.18	NO		38	
A 104	15				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20	
A 104L			P2-C7	15				.18	NO		28	
			P1-19	3				.18	NO		38	
A 104R			P2-C6	15				.18	NO		28	
			P1-18	3				.18	NO		38	
A 105	17		P2-F8	15				.18	NO		28	
			P1-24	3				.18	NO		38	
A 107	15				2.30	2.00				B,7	20	
					2.30	2.00				B,7	20	
A 107L			E11	14				.38	NO			
			P1-28	3				.18	NO		38	
A 107R			E13	16				.38	NO			
			P1-27	3				.18	NO		38	
A 108	16				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20	
A 108L			P2-G12	15				.18	NO		28	
			P1-33	3				.18	NO		39	SEE NOTE 20

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 108R			P2-D12 P1-32	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 108Y			P2-F12 P1-34	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 109	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 109L			P2-B14 P1-38	15 3				.18 .18	NO NO		28 38	
A 109R			P2-A14 P1-37	15 3				.18 .18	NO NO		28 38	
A 110	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 110L			P2-K13 P1-42	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 110R			P2-H13 P1-41	15 3				.18 .18	NO NO		28 39	SEE NOTE 20
A 112	15				2.30 5.30	2.00 5.00				B,7 B,7	20 20	
A 112L			P11-35 P2-K14	9 15				.15 .18	NO NO		29 28	
A 112R			P11-34 P2-H14	9 15				.15 .18	NO NO		29 28	
A 114	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 114A	17		SHLD A114 E1	 21				.25 .25	NO NO			
A 114W			P12-2/I P3-620	18 12				.21 .18	NO NO		35, 40, 51 28	
A 115	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	
A 115A	17		SHLD A115 E1	 21				.25 .25	NO NO			
A 115W			P12-9/I P3-121	18 12				.21 .18	NO NO		35, 40, 51 28	
A 116	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 116A	17		SHLD A116 E1	 21				.25 .25	NO NO			
A 116W			P12-3/I P3-221	18 12				.21 .18	NO NO		35, 40, 51 28	
A 117	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 117A	17		SHLD A117 E1	 21				.25 .25	NO NO			
A 117W			P12-10/I P3-321	18 12				.21 .18	NO NO		35, 40, 51 28	
A 118	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 118A	17		SHLD A118 E1	 21				.25 .25	NO NO			
A 118W			P12-3/O P3-421	18 12			.22	.23 .18	NO NO		41 28	
A 119	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 119A	17		SHLD A119 E1	 21					NO NO			
A 119W			P12-10/O P3-521	18 12			.22	.23 .18	NO NO		41 28	
A 120	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 120A	17		SHLD A120 E2	 19				.25 .25	NO NO			
A 120W			P12-1/O P3-621	18 12				.23 .18	NO NO		41 28	
A 121	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 121A	17		SHLD A121 E2	 19				.25 .25	NO NO			
A 121W			P12-11/I P3-122	18 12				.21 .18	NO NO		35, 40, 51 28	
A 122	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 122A	17		SHLD A122 E2	 19				.25 .25	NO NO			
A 122W			P12-1/I P3-222	18 12				.21 .18	NO NO		35, 40, 51 28	
A 123	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 123A	17		SHLD A123 E2	 19				.25 .25	NO NO			
A 123W			P12-11/O P3-322	18 12				.23 .18	NO NO		41 28	
A 124	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 124L			P2-B26 P4-19/O	15 2			 .32	.18 .23	NO NO		28 31	
A 124R			P2-A26 P4-19/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 125	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 125L			P2-B28 P4-20/O	15 2			 .32	.18 .23	NO NO		28 31	
A 125R			P2-A28 P4-20/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 126	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 50 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126L			P2-B30	15				.18	NO		28	
			P4-21/O	2			.32	.23	NO		31	
A 126R			P2-A30	15				.18	NO		28	
			P4-21/I	2				.21	NO		32, 34, 35	
A 127	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 127L			P11-32	9				.15	NO		29	
			P2-B15	15				.18	NO		28	
A 127R			P11-31	9				.15	NO		29	
			P2-A15	15				.18	NO		28	
A 128	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 128L			P2-A21	15				.18	NO		28	
			P3-33B	12				.18	NO		28	
A 128R			P2-B21	15				.18	NO		28	
			P3-23B	12				.18	NO		28	
A 129	17		P2-B17	15				.18	NO		28	
			P3-13B	12				.18	NO		28	
A 130	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	
A 130L			P2-K28	15				.18	NO		28	
			P4-25/O	2			.32	.23	NO		31	
A 130R			P2-K29	15				.18	NO		28	
			P4-25/I	2				.21	NO		32, 34, 35	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 51 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 131	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 131L			P2-G5	15				.18	NO		28	
			E11	14				.38	NO			
A 131R			P2-G4	15				.18	NO		28	
			E10	13				.38	NO			
A 132			DELETED									
A 132L			DELETED									
A 132R			DELETED									
A 134	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 134A	17		SHLD A134					.25	NO			
			P2-G23	15				.18	NO		28	
A 134B	14		P8-25/O	7				.23	NO		31, 33	
			SHLD A134					.25	NO			
A 134L			P2-K23	15				.18	NO		28	
			P8-26/O	7			.32	.23	NO		31	
A 134R			P2-H23	15				.18	NO		28	
			P8-26/I	7				.21	NO		32, 34, 35	
A 135	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 52 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 135A	17		SHLD A135					.25	NO			
			P2-G24	15				.18	NO		28	
A 135B	14		P8-16/I	7				.21	NO		32, 34, 35	
			SHLD A135					.25	NO			
A 135L			P2-K24	15				.18	NO		28	
			P8-15/O	7			.32	.23	NO		31	
A 135R			P2-H24	15				.18	NO		28	
			P8-15/I	7				.21	NO		32, 34, 35	
A 136	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 136A	17		SHLD A136					.25	NO			
			P2-G25	15				.18	NO		28	
A 136B	14		P8-16/O	7				.23	NO		31, 33	
			SHLD A136					.25	NO			
A 136L			P2-K25	15				.18	NO		28	
			P8-17/O	7			.32	.23	NO		31	
A 136R			P2-H25	15				.18	NO		28	
			P8-17/I	7				.21	NO		32, 34, 35	
A 137	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 137A	17		SHLD A137					.25	NO			
			P2-G21	15				.18	NO		28	
A 137B	14		P8-19/I	7				.21	NO		32, 34, 35	
			SHLD A137					.25	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 53 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 137L			P2-K21	15				.18	NO		28	
			P8-18/O	7			.32	.23	NO		31	
A 137R			P2-H21	15				.18	NO		28	
			P8-18/I	7				.21	NO		32, 34, 35	
A 139	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 139A	17		SHLD A139					.25	NO			
			P2-G22	15				.18	NO		28	
A 139B	14		P8-19/O	7				.23	NO		31, 33	
			SHLD A139					.25	NO			
A 139L			P2-K22	15				.18	NO		28	
			P8-20/O	7			.32	.23	NO		31	
A 139R			P2-H22	15				.18	NO		28	
			P8-20/I	7				.21	NO		32, 34, 35	
A 141	14		P12-4/I	18				.21	NO		40, 51, 35	
			P2-F9	15				.18	NO		28	
A 142	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 142L			P11-12	9				.15	NO		29	
			P2-D1	15				.18	NO		28	
A 142R			P11-11	9				.15	NO		29	
			P2-D2	15				.18	NO		28	
A 144	27				3.30	3.00				A,6A	33, 19, 20	
					5.30	5.00				B,7	20	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	6900044
SCALE-NONE	REV LTR ~~B~~ ~~C~~ D	SHEET 54 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 144A	17		SHLD A144 E2	 19				.25 .25	NO NO			
A 144L			P12-16/O P2-G28	18 15			.22	.23 .18	NO NO		41 28	
A 144R			P12-16/I P2-G31	18 15				.21 .18	NO NO		35, 40, 51 28	
A 145	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 20 20	SEE NOTE 9
A 145A	17		SHLD A145 E2	 19				.25 .25	NO NO			
A 145W			P12-15/O P2-G30	18 15				.23 .18	NO NO		41 28	
A 147	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 147A	17		SHLD A147 E2	 19				.25 .25	NO NO			
A 147W			P12-15/I P2-G29	18 15				.21 .18	NO NO		35, 40, 51 28	
A 154	27				2.80 2.80	2.50 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 154B	17		P3-347 SHLD A154	12				.18 .25	NO NO			SEE NOTE 20
A 154L			P14-34/O P3-247	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 55 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154R			P14-34/I P3-147	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 155	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 155B	17		P3-647 SHLD A155	12				.18 .25	NO NO			SEE NOTE 20
A 155L			P14-35/O P3-547	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 155R			P14-35/I P3-447	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 156	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 156B	17		P3-349 SHLD A156	12				.18 .25	NO NO			SEE NOTE 20
A 156L			P14-32/O P3-249	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 156R			P14-32/I P3-149	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 157	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 157B	17		P3-649 SHLD A157	12				.18 .25	NO NO			SEE NOTE 20
A 157L			P14-33/O P3-549	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 56 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 E ~~B~~ ~~C~~ ~~D~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 157R			P14-33/I P3-449	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 158	14		P12-2/O P3-119	18 12				.23 .18	NO NO		41, 33 28	
A 159	14		P12-9/O P3-422	18 12				.23 .18	NO NO		41, 33 28	
A 164	27				2.80 2.80	2.50 2.50				B,7 B,7	20, 33 20	
A 164L			P1~~4~~2-31/O P13-8	17 1			.22	.23 .15	NO NO		41 30	
A 164R			P1~~4~~2-31/I P13-7	17 1				.21 .15	NO NO		40, 51, 35 30	
A 165	27				2.80 5.30	2.50 5.00				B,7 B,7	20, 33 20	
A 165L			P12-46/O P2-A23	18 15			.22	.23 .18	NO NO		41 28	
A 165R			P12-46/I P2-B23	18 15				.21 .18	NO NO		40, 51, 35 28	
A 171	44				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 171L			P12-4/O ~~P2-G9~~ E14-B	18 ~~15~~ 23			.22	.23 ~~.18~~ .25	NO NO		41, 33 ~~20~~	 ~~SEE NOTE 20~~
A 171R			P12-33/O P2-G8	18 15			.22	.23 .18	NO NO		41, 33 28	 SEE NOTE 20

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ ~~D~~ E | SHEET 57 OF ~~71~~ 72

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CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 171Y			P12-33/I E13	18 16				.21 .38	NO NO		40, 51, 35	
A 178	15				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 178L			P11-14 P2-C1	9 15				.15 .18	NO NO		29 28	
A 178R			P11-13 P2-C2	9 15				.15 .18	NO NO		29 28	
A 284	14		P2-A22 P8-41	15 7				.18 ~~.21~~ .18	NO NO		28 ~~32, 34, 35~~ 38	 ~~SEE NOTE 24~~
A 344	16				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 344L			P2-F14 P1-46	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 344R			P2-G14 P1-45	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 344Y			P2-D14 P1-44	15 3				.18 .18	NO NO		28 39	 SEE NOTE 20
A 345	15				3.30 3.30	3.00 3.00				B,7 B,7	20 20	
A 345L			E11 P1-26	14 3				.38 .18	NO NO		 38	
A 345R			E13 P1-25	16 3				.38 .18	NO NO		 38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE - NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 58 OF ~~71~~ 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 346	15				3.80 3.80	3.50 3.50				B,7 B,7	20 20	
A 346L			E11 P1-26	14 3				.38 .18	NO NO		 38	
A 346R			E13 P1-25	16 3				.38 .18	NO NO		 38	
A 347	15				3.80 3.80	3.50 3.50				B,7 B,7	20 20	
A 347L			E11 P1-28	14 3				.38 .18	NO NO		 38	
A 347R			E13 P1-27	16 3				.38 .18	NO NO		 38	
A 348	17		P2-A8 E13	15 16				.18 .38	NO NO		28	
A 348L			DELETED									
A 348R			DELETED									
A 349	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 349L			P2-G7 P1-19	15 3				.18 .18	NO NO		28 38	
A 349R			P2-G6 P1-18	15 3				.18 .18	NO NO		28 38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 59 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 350	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 350L			P2-B7 P1-23	15 3				.18 .18	NO NO		28 38	
A 350R			P2-B6 P1-22	15 3				.18 .18	NO NO		28 38	
A 351	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 351L			P2-F7 P1-21	15 3				.18 .18	NO NO		28 38	
A 351R			P2-F6 P1-20	15 3				.18 .18	NO NO		28 38	
A 352	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 352L			P2-A7 P1-21	15 3				.18 .18	NO NO		28 38	
A 352R			P2-A6 P1-20	15 3				.18 .18	NO NO		28 38	
A 353	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 353L			P2-A5 E11	15 14				.18 .38	NO NO		28	
A 353R			P2-A4 E10	15 13				.18 .38	NO NO		28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 60 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 354	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 354L			P2-B5 E11	15 14				.18 .38	NO NO		28	
A 354R			P2-B4 E10	15 13				.18 .38	NO NO		28	
A 355	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 355L			P2-C5 E11	15 14				.18 .38	NO NO		28	
A 355R			P2-C4 E10	15 13				.18 .38	NO NO		28	
A 356	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 356L			P2-D5 E11	15 14				.18 .38	NO NO		28	
A 356R			P2-D4 E10	15 13				.18 .38	NO NO		28	
A 357	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 357L			P2-F5 E11	15 14				.18 .38	NO NO		28	
A 357R			P2-F4 E10	15 13				.18 .38	NO NO		28	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 61 OF ~~71~~ 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 358	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A 358A	17		SHLD A358 E4					.25 .38	NO NO			
A 358B	17		P5-42 SHLD A358	4				.15 .25	NO NO		30	
A 358L			P3-337 P5-41	12 4				.18 .15	NO NO		28 30	
A 358R			P3-237 P5-40	12 4				.18 .15	NO NO		28 30	
A 359	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A 359A	17		SHLD A359 E4					.25 .38	NO NO			
A 359B	17		P5-45 SHLD A359	4				.15 .25	NO NO		30	
A 359L			P3-537 P5-44	12 4				.18 .15	NO NO		28 30	
A 359R			P3-437 P5-43	12 4				.18 .15	NO NO		28 30	
A 360	14		P3-611 P9-33/0	12 6				.18 .23	NO NO		28 41, 33	
A 361	15				5.30 2.60	5.00 2.30				B,7 ~~B,7~~ A,6B	20 ~~20~~ 19,20	
A 361B	17		P5-81 SHLD A361	4				.15 .25	NO NO		30	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 6900044
SCALE-NONE | REV LTR ~~B~~ ~~C~~ D | SHEET 62 OF ~~71~~ 72

CABLE ASSEMBLY W133 6900044 E ~~B~~ ~~C~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 361L			P2-K15 P5-83	15 4				.18 .15	NO NO		28 30	
A 361R			P2-H15 P5-82	15 4				.18 .15	NO NO		28 30	
A 365	14		P1~~2~~4-~~53~~48/I P1-12	18 3				.21 .18	NO NO		40, 51, 35 38	
A 366	17		P3-236 E12	12 11				.18 .38	NO NO		28	
A 367	17		P3-436 E12	12 11				.18 .38	NO NO		28	
A 385	53				3.80 3.80	3.50 3.50				8,7 8,7	59 59	
A 385L			P10-B E11	10 14				.28 .38	YES NO			
A 385R			P10-A E10	10 13				.28 .38	YES NO			
A 387	18		P10-H E13	10 16				.28 .38	YES NO			
A 397	15				5.30 3.80	5.00 3.50				8,7 8,7	20 20	
A 397L			P2-K12 P1-42	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 397R			P2-H12 P1-41	15 3				.18 .18	NO NO		28	SEE NOTE 20

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ ~~D~~ E
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MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 E ~~B~~ ~~C~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 398	16				5.30 3.80	5.00 3.50				8,7 8,7	20 20	
A 398L			P2-F11 P1-34	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 398R			P2-D11 P1-32	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 398Y			P2-G11 P1-33	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399	16				5.30 3.80	5.00 3.50				8,7 8,7	20 20	
A 399L			P2-F13 P1-46	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399R			P2-D13 P1-44	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 399Y			P2-G13 P1-45	15 3				.18 .18	NO NO		28	SEE NOTE 20
A 417	14		P1~~2~~4-~~53~~48/O P1-13	18 3			.22	.23 .18	NO NO		41, 33 38	
A 420	14		P2-G20 P8-44/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 421	14		P2-H20 P8-44/O	15 7				.18 .23	NO NO		28 31, 33	
A 424	17		P2-G18 P4-22	15 2				.18 .18	NO NO		28 38	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ ~~D~~ E
SHEET 64 OF ~~71~~
72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 426	18		P10-M E12	10 11				.28 .38	YES NO			
A 442	27				3.80 5.30	3.50 5.00				8,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 442B	17		P3-646 SHLD A442	12				.18 .25	NO NO			SEE NOTE 20
A 442L			P12-24/O P3-546	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 442R			P12-24/I P3-446	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 443	27				3.80 5.30	3.50 5.00				8,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 443B	17		P3-348 SHLD A443	12				.18 .25	NO NO			SEE NOTE 20
A 443L			P12-25/O P3-248	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 443R			P12-25/I P3-148	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 444	27				3.80 5.30	3.50 5.00				8,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 444B	17		P3-648 SHLD A444	12				.18 .25	NO NO			SEE NOTE 20
A 444L			P12-26/O P3-548	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 65 OF ~~71~~
72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 444R			P12-26/I P3-448	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 445	27				3.80 5.30	3.50 5.00				8,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 445B	17		P3-346 SHLD A445	12				.18 .25	NO NO			SEE NOTE 20
A 445L			P12-23/O P3-246	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 445R			P12-23/I P3-146	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 446	18		P10-E E10	10 13				.28 .38	YES NO			
A 449	18		P10-G E11	10 14				.28 .38	YES NO			
A 450	18		P10-N E11	10 14				.28 .38	YES NO			
A 453	18		P10-U P10-C*	10 10				.28 .28	YES YES			
A 454	18		P10-F E13	10 16				.28 .38	YES NO			
A 455	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 455A	17		SHLD A455 E4	22				.25 .38	NO NO			

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE-NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 66 OF ~~71~~
72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 455B	17		P5-27	4				.15	NO		30	
			SHLD A455					.25	NO			
A 455L			P3-233	12				.18	NO		28	
			P5-26	4				.15	NO		30	
A 455R			P3-133	12				.18	NO		28	
			P5-25	4				.15	NO		30	
A 456	15				5.30	5.00				B,7	20	
					2.60	2.30				B,7	20	
A 456L			P2-G16	15				.18	NO		28	
			P5-80	4				.15	NO		30	
A 456R			P2-H16	15				.18	NO		28	
			P5-79	4				.15	NO		30	
A 457	44				5.30	5.00				B,7	20	
					3.30	3.00				B,7	20	
A 457L			~~P2-G9~~ E14-B	~~15~~ 23				~~.18~~ .25	NO			~~SEE NOTE 20~~
			P11-9	9				.15	NO		29	
A 457R			P2-G8	15				.18	NO			SEE NOTE 20
			P11-7	9				.15	NO		29	
A 457Y			E13	16				.38	NO			
			P11-8	9				.15	NO		29	
A 458	18		E1	21				.25	NO			
			E3	20				.25	NO			
A 459	18		E2	19				.25	NO			
			E3	20				.25	NO			

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 67 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 460	18		E3	20				.25	NO			
			P12-44	18				.25	NO		36	
A 461	17		P9-55	6				.21	NO		37	
			P3-438	12				.18	NO		28	
A 462	17		E4	22				.38	NO			
A 463	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 463L			P11-~~65~~ 66	9				.15	NO		29	
			~~P2-A27~~ E14-B	~~15~~ 23				~~.18~~ .25	NO		~~28~~	
A 463R			P11-~~66~~ 65	9				.15	NO		29	
			P2-~~B27~~ A27	15				.18	NO		28	
A 464	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 464L			P11-~~67~~ 68	9				.15	NO		29	
			~~P2-A29~~ E14-B	~~15~~ 23				~~.18~~ .25	NO		~~28~~	
A 464R			P11-~~68~~ 67	9				.15	NO		29	
			P2-~~B29~~ A29	15				.18	NO		28	
A 465	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 465L			P11-~~69~~ 70	9				.15	NO		29	
			~~P2-A31~~ E14-B	~~15~~ 23				~~.18~~ .25	NO		~~28~~	
A 465R			P11-~~70~~ 69	9				.15	NO		29	
			P2-~~B31~~ A31	15				.18	NO		28	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 68 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 ~~B~~ ~~C~~ D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 466	14		P2-H17	15				.25	NO		28	
			P8-42/O	7				.23	NO		31, 34, 35	
A 467	17		P6-37	5				.15	NO		29	
			P6-38	5				.15	NO		29	
A 468	14		P1-50/I	3				.21	NO		31, 33	
			P1-50/O	3				.23	NO		32, 34, 35	
A 469	14		P9-40/I	6				.21	NO		40, 51, 35	
			P3-522	12				.18	NO		28	
A 470	14		P9-40/O	6				.23	NO		41, 33	
			P3-622	12				.18	NO		28	
A 471	17		P2-K4	15				.18	NO		28	
			E13	16				.38	NO			
A 472	17		P2-C8	15				.18	NO		28	
			P1-~~15~~ 2	3				.18	NO		38	
A 473	17		P2-B8	15				.18	NO		28	
			P1-~~50~~ 55	3				.18	NO		38	
A 474	27				3.30	3.00				B,7	20, 33	SEE NOTE 9
					5.30	5.00				B,7	20	
A 474L			P12-47/O	18			.22	.23	NO		41	
			P2-F2	15				.18	NO		28	
A 474R			P12-47/I	18				.21	NO		40, 51, 35	
			P2-F1	15				.18	NO		28	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
6900044
SCALE - NONE
REV LTR ~~B~~ ~~C~~ D
SHEET 69 OF ~~71~~ 72

MIL 2084 4-63

CABLE ASSEMBLY W133 6900044 D

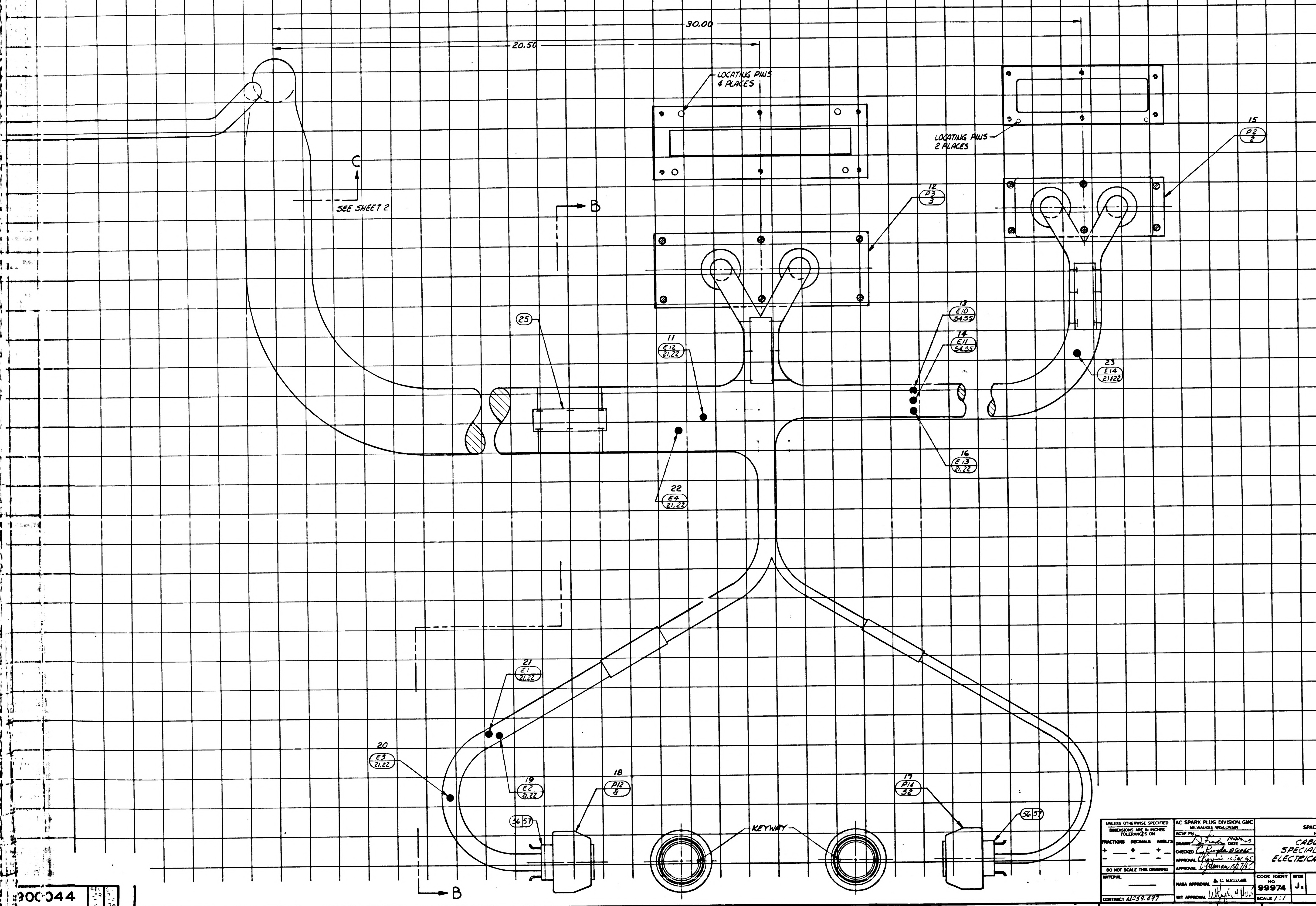
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 475	17		E14-13	23				.25	NO			
			P2-G9	15				.18	NO		28	
A 476	17		P12-12/O	18				.23	NO		41, 33	
			P2-B27	15				.18	NO		28	
A 477	14		P12-12/I	18				.21	NO		51, 40, 35	
			P2-B29	15				.18	NO		28	
A 478	14		P12-14/I	18				.21	NO		51, 40, 35	
			P2-B31	15				.18	NO		28	
A 479	17		P12-14/O	18				.23	NO		41, 33	
			E14-B	23				.25	NO			

SIZE A
CODE IDENT. NO.
6900044
SCALE NONE
REV LTR D
SHEET 70 OF 72

MIL 2084 8-65

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO		

SEE SHEET 1 FOR REVISION RECORD



30.00
20.50
LOCATING PINS 4 PLACES
LOCATING PINS 2 PLACES
C
SEE SHEET 2
B
15 P2 2
12 P3 3
25
11 E12 21,22
13 E10 54,55
14 E11 54,55
23 E14 21,22
16 E13 21,22
22 E4 21,22
21 E1 21,22
20 E3 21,22
19 E2 21,22
18 P12 8
17 P14 52
56 57
KEYWAY
56 57
B

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN D. Finder DATE 14 AUG 65	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED W133
	CHECKED 10 Sep 65	
	APPROVAL 10 Sep 65	
DO NOT SCALE THIS DRAWING	APPROVAL Goldman 10/7/65	
MATERIAL —	NASA APPROVAL B. C. METZGER	CODE IDENT NO. 99974 · SIZE J₂ · 6900044
CONTRACT NAS9-497	MIT APPROVAL W Kupfer 4 Nov 65	SCALE 1:1 · SHEET 7 OF 7

6900044

2769000 44

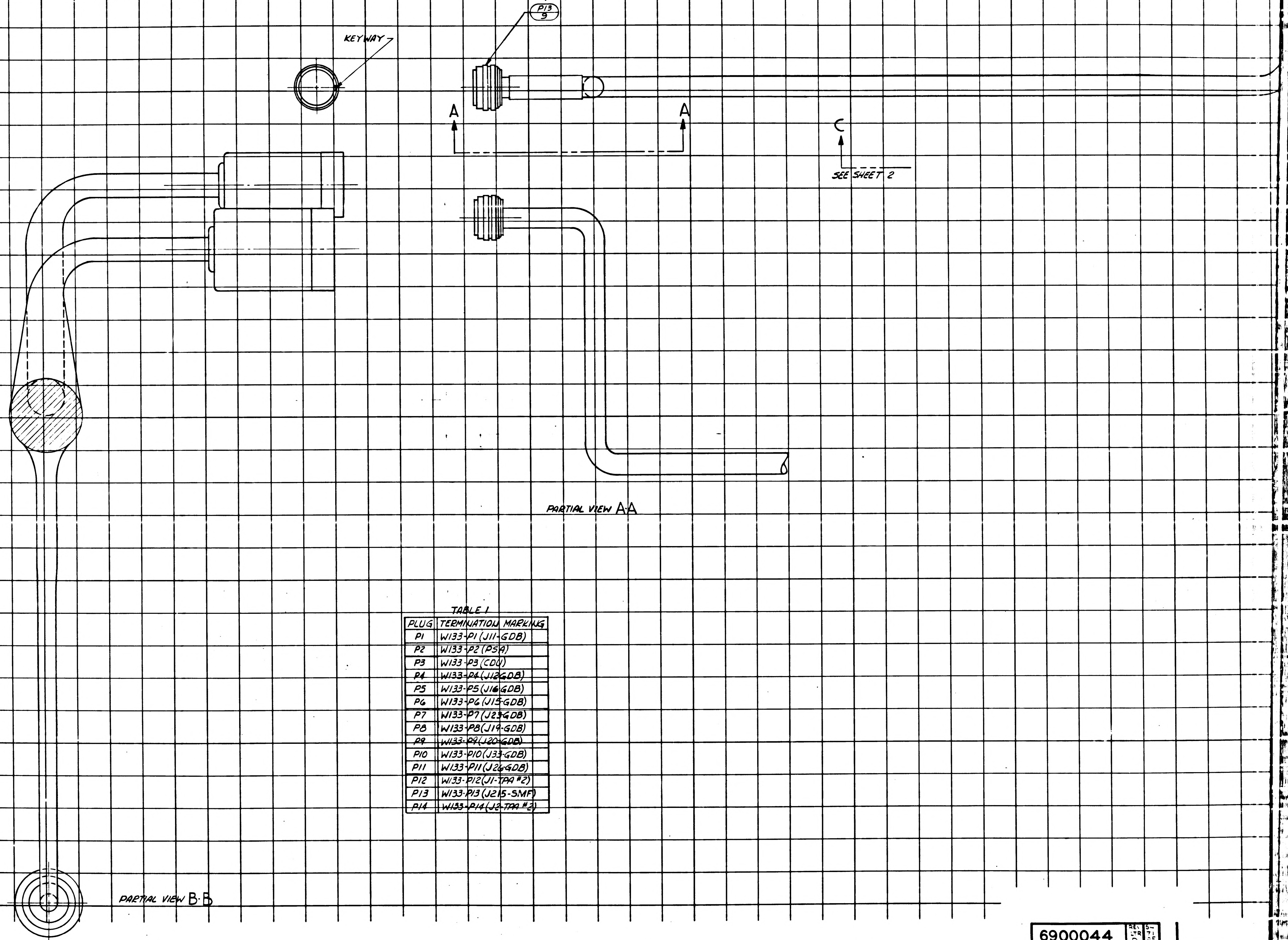

KEYWAY
P13
9
A
A
C
SEE SHEET 2
PARTIAL VIEW A-A
PARTIAL VIEW B-B

TABLE 1

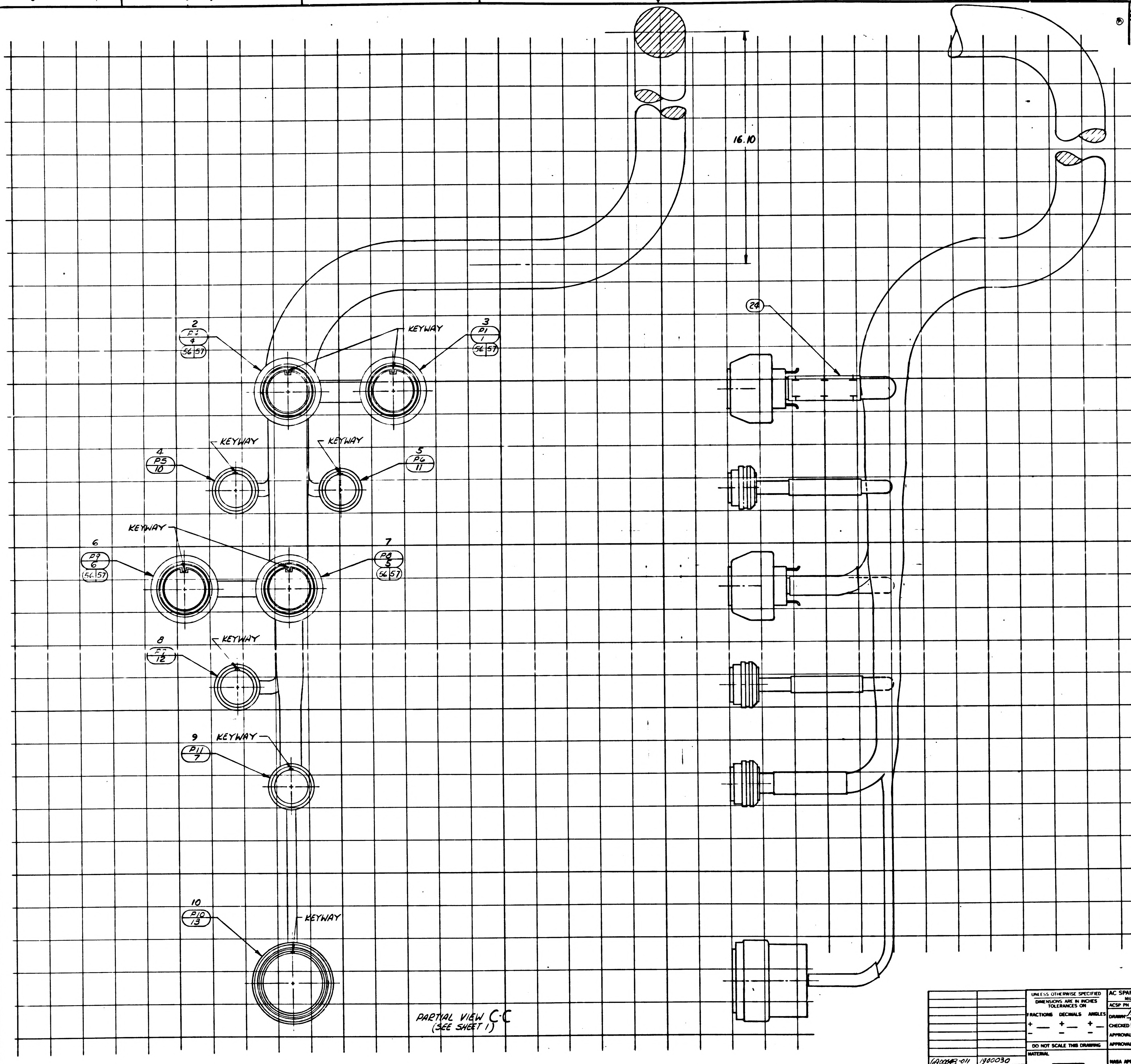
PLUG	TERMINATION MARKING
P1	W133-P1 (J11-GDB)
P2	W133-P2 (PSA)
P3	W133-P3 (CDU)
P4	W133-P4 (J12GDB)
P5	W133-P5 (J16GDB)
P6	W133-P6 (J15-GDB)
P7	W133-P7 (J23-GDB)
P8	W133-P8 (J19-GDB)
P9	W133-P9 (J20-GDB)
P10	W133-P10 (J33-GDB)
P11	W133-P11 (J26-GDB)
P12	W133-P12 (J1-TPA #2)
P13	W133-P13 (J215-SMF)
P14	W133-P14 (J2-TPA #2)

6900044 REV LTR D SH 71 OF 72

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

SEE SHEET 1 FOR REVISION RECORD


16.10
2
P2
4
56 57
KEYWAY
3
P1
1
56 57
4
P5
10
KEYWAY
KEYWAY
5
P6
11
KEYWAY
6
P9
6
56 57
7
P8
5
56 57
8
P7
12
KEYWAY
9
P11
7
KEYWAY
10
P10
13
KEYWAY
24

PARTIAL VIEW C-C
(SEE SHEET 1)

6900043-011	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 9 AUG 65
CHECKED C. Pyrda 10 SEP 65
APPROVAL 16 SEP 65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL BRANCHED
W 133

CODE IDENT NO. 99974
SIZE E
6900044
SCALE 1:1
SHEET 72 OF 72

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900090	A	REPLACES REV(-) WITH CHANGE PER MXC 204908; WAS "C" SIZE WORD DRAWING	17SEP 65	PHG EF
		B	REVISED PER MXC-206061	19 OCT. 65	JWP EF
	Ⓜ	C	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	ALP CW
		D	REVISED PER TDRR 24142	24 NOV 65	LK MEM
	Ⓜ	E	REVISED PER TDRR 24173	29 NOV 65	RLF EF
		F	REVISED PER TDRR 24858	26 DEC 65	JWP W.S.

REV	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS	REV						F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
OF SHEETS	SHEET						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN A.J. FLUDER DATE 19AUG65
CHECKED C. PIOJDA 10 SEP 65
APPROVAL R. PIERINI 10 SEP 65
APPROVAL VGeliman 10/26/65

NASA APPROVAL A. C. METZGER
MIT APPROVAL WR [illegible]

CONTRACT NAS9-497

CABLE ASSEMBLY
SPECIAL PURPOSE
BRANCHED ELECTRICAL
W133

CODE IDENT NO.	SIZE		REV
99974	A	6900044	F

SCALE ——

SHEET 1 OF 72

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	F														
48	F														
49	F														
50	F														
51	F														
52	F														
53	F														
54	F														
55	F														
56	F														
57	F														
58	F														
59	F														
60	F														
61	F														
62	F														
63	F														
64	F														
65	F														
66	F														
67	F														
68	F														
69	F														
70	F														
71	D														
72	D														

	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	REVISION F	NASA DRAWING NO. 6900044 SHEET 2 OF 72

NOTE NUMBER — GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 LACE HARNESS USING ITEM 26.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019.

6 APPLY LEAD IDENTIFICATIONS PER ND 1002019.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 POSITION IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
A - FROM END SHIELD
B - TO END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER.
W - WHITE
Y - WHITE WITH YELLOW TRACER.

11 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	F	SHEET	3 OF 72

NOTE NUMBER — GENERAL NOTES DESCRIPTION

12 ITEMS 50 (13) AND ITEM 29 (85) SUPPLIED WITH ITEM 7.
ITEMS 50 (13) AND ITEM 30 (85) SUPPLIED WITH ITEMS 9, 10 AND 12.
ITEM 50(9) AND ITEM 29 (61) SUPPLIED WITH ITEM 11.

13 SECURE TO CABLE USING ITEM 26, MARKING TO READ AWAY FROM CONNECTOR ALIGN CENTER LINE OF BAND AND OF ASSOCIATED CONNECTOR MASTER KEY SLOT TO BE COLINEAR WITHIN + OR -0.25 IN.

14 MARK IDENTIFICATION BANDS AS NOTED IN TABLE 1,.12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

15 FILL THE SPACE BETWEEN WIRE BUNDLE AND STRAIN RELIEF CLAMP USING ITEM 23 TO SECURE WIRE BUNDLE IN THE CLAMP.

16 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

17 DELETED

18 SOLDER PER MIL-S-6872 (ES2505-1) USING ITEM 48 OR ITEMS 46 AND 47.

19 SERIALIZE PER ND1002023.

20 LEADS USE COMMON ACCESSORY

21 IN CIRCUIT POINT FIELD
I - INDICATES INNER LEAD
O - INDICATES OUTER LEAD

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	F	SHEET	4 OF 72

NOTE NUMBER — GENERAL NOTES DESCRIPTION

22 TYPICAL INSTALLATION OF CONTACTS AND ASSOCIATED HARDWARE---
ASSEMBLE ITEM 33 OVER BOTH LEADS (I AND O). ASSEMBLE ITEM 35, ITEM 34 OR 51, AND ITEM 32 OR 40 TO INNER LEAD IN ORDER LISTED. CRIMP ITEM 32 OR 40. ASSEMBLE ITEM 31 OR 41 TO ITEM 32 OR 40. SLIDE ITEM 35 OVER ITEM 31 OR 41 UNTIL SEATED. LAYOUTER LEAD AGAINST ITEM 31 OR 41 IN OPEN SECTION OF ITEM 35. SLIDE ITEM 33 FORWARD AGAINST SPRING AND CRIMP.

23 DELETED

24 DELETED

25 ASSEMBLE PER ND1002032.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	F	SHEET	5 OF 72

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	1	1	1897215-004	CONNECTOR, PLUG ELEC.
	2	1	6900050-011	CONNECTOR, PLUG ELEC.
	3	1	2900714-011	CONNECTOR, PLUG ELEC.
8	4	1	1897215-005	CONNECTOR, PLUG ELEC.
8	5	1	1897215-003	CONNECTOR, PLUG ELEC.
8	6	1	1897215-013	CONNECTOR, PLUG ELEC.
8	7	1	1897250-001	CONNECTOR, PLUG ELEC.
8	8	1	1897215-011	CONNECTOR, PLUG ELEC.
8	9	1	1897249-204	CONNECTOR, PLUG ELEC.
8	10	1	1897249-001	CONNECTOR, PLUG ELEC.
8	11	1	1897250-006	CONNECTOR, PLUG ELEC.
8	12	1	1897249-004	CONNECTOR, PLUG ELEC.
8	13	1	1897232-231	CONNECTOR, PLUG ELEC.
	14	1	6900044-001	WIRE ND1002181 TYPE 1, CLASS 1, 24AWG, WHT. 100FT. TOTAL LENGTH
	15	1	6900044-002	WIRE ND1002181 TYPE 2, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU 411FT. TOTAL LENGTH
	16	1	6900044-003	WIRE ND1002181 TYPE 3, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU, WHT/YEL 24FT. TOTAL LENGTH

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	F	SHEET	6 OF 72

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900044-004	WIRE NC1002181, TYPE 1, CLASS 1, 22AWG, WHT. 136FT. TOTAL LENGTH
	18	1	6900044-005	WIRE ND1002181 TYPE 1, CLASS 1, 16AWG, WHT 44FT TOTAL LENGTH
8	19	179	1010763- 2	SOLDER SLEEVE
8	20	298	1010490-228	INSULATION SLEEVING
8	21	7	1016006-002	SPLICE REDUCER
8	22	7	1010490-258	INSULATION SLEEVING
	23	AR	1901390	FILLER TAPE
8	24	14	1016128-041	BAND ICENTIFICATION
8	25	1	1016128-011	BAND IDENTIFICATION
	26	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2 BLACK (ES2732 NO. 18)
	27	1	6900044-006	WIRE NC1002181, TYPE 2, CLASS 4, WHT. JKT. 24AWG WHT/RED, WHT/BLU 344FT. TOTAL LENGTH
8	28	130	1897300-003	CONTACT SPRING CLIP
8	29		1897190- 1	CONTACT PIN
8	30		1897190- 2	CONTACT SOCKET
8	31	47	1016369-288	CONTACT OUTER MALE
8	32	49	1016369-388	CONTACT INNER FEMALE

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 7 OF 72

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	33	108	1016369-588	HYRING
8	34	48	1016369-712	SLEEVE INNER
8	35	106	1016369-713	SLEEVE OUTER
8	36	1	1016369-721	CONTACT FEMALE
8	37	3	1016369-421	CONTACT FEMALE
8	38	32	1016369-420	CONTACT MALE
8	39	8	1016369-720	CONTACT MALE
8	40	60	1016369-188	CONTACT INNER MALE
8	41	59	1016369-488	CONTACT OUTER FEMALE
8	42	4	1010933-105	STRAIN RELIEF CLAMP
8	43	1	1010933-104	STRAIN RELIEF CLAMP
	44	1	6900044-007	WIRE ND1002181 TYPE 3, CLASS 4 WHT JKT 24AWG, WHT/REC, WHT/BLU, WHT/YEL, 11FT. TOTAL LENGTH
	45	1	6900044-008	WIRE NC1002181 TYPE 1, CLASS 4, WHT JKT 24AWG, WHT, 43FT. TOTAL LENGTH
	46	AR	SN60WS	SOLDER QQ-S-571(ES2175-1)
	47	AR	MIL-F-14256 TYPE A OR W	FLUX(ES2798)
	48	AR	SN60WRAP	SOLDER QQ-S-571(ES2175-3)
8	49	12	1010763- 1	SOLDER SLEEVE

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 8 OF 72

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	50		1010958-001	DELETED
8	51	57	1016369-711	SLEEVE INNER
8	52	1	1897215-012	CONNECTOR, PLUG ELEC.
	53	1	6900044-009	WIRE NC1002181 TYPE 2, CLASS 4, WHT JKT 16AWG WHT/RED WHT/BLU 6FT. TOTAL LENGTH
8	54	2	1016006-004	SPLICE REDUCER
8	55	2	1010490-284	INSULATION SLEEVING
8	56	6	1897331-001	ADAPTER, CABLE CLAMP
8	57	6	1897330-001	CLAMP, CABLE
8	58	22	1010490-232	INSULATION SLEEVING
8	59	2	1010490-226	INSULATION SLEEVING
8	60	214	1897300-002	CONTACT, ELECTRICAL, SPRING SOCKET

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 9 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTES 9, 22
A	1A	17		SHLD A1 P3-340	 12				.25 .18	NO NO		 60	
A	1B	14		P4-2/0 SHLD A1	2				.23 .25	NO NO		31, 33	
A	1L			P3-240 P4-3/0	12 2			 .32	.18 .23	NO NO		28 31	
A	1R			P3-140 P4-3/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	2	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	2A	17		SHLD A2 P3-640	 12				.25 .18	NO NO		 60	
A	2B	14		P4-2/I SHLD A2	2				.21 .25	NO NO		32, 34, 35	
A	2L			P3-540 P4-1/0	12 2			 .32	.18 .23	NO NO		28 31	
A	2R			P3-440 P4-1/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	3	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	3A	17		SHLD A3 P3-341	 12				.25 .18	NO NO		 60	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 10 OF 72

6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	14		P4-11/0 SHLD A3	2				.23 .25	NO NO		31, 33	
A 3L			P3-241 P4-12/0	12 2			.32	.18 .23	NO NO		28 31	
A 3R			P3-141 P4-12/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 4	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 4A	17		SHLD A4 P3-641	 12				.25 .18	NO NO		 60	
A 4B	14		P4-11/I SHLD A4	2				.21 .25	NO NO		32, 34, 35	
A 4L			P3-541 P4-10/0	12 2			.32	.18 .23	NO NO		28 31	
A 4R			P3-441 P4-10/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 5	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 5A	17		SHLD A5 P3-342	 12				.25 .18	NO NO		 60	
A 5B	14		P4-5/0 SHLD A5	2				.23 .25	NO NO		31, 33	
A 5L			P3-242 P4-6/0	12 2			.32	.18 .21	NO NO		28 31	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 11 OF 72

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6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG.	ACCESSORY ITEMS	REMARKS
A 5R			P3-142 P4-6/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 6	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 6A	17		SHLD A6 P3-642	 12				.25 .18	NO NO		 60	
A 6B	14		P4-5/I SHLD A6	2				.21 .25	NO NO		32, 34, 35	
A 6L			P3-542 P4-4/0	12 2			.32	.18 .23	NO NO		28 31	
A 6R			P3-442 P4-4/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 7	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 7A	17		SHLD A7 P3-343	 12				.25 .18	NO NO		 60	
A 7B	14		P4-14/0 SHLD A7	2				.23 .25	NO NO		31, 33	
A 7L			P3-243 P4-15/0	12 2			.32	.18 .23	NO NO		28 31	
A 7R			P3-143 P4-15/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 8	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 12 OF 72

MIL 2084 9-65

6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 8A	17		SHLD A8 P3-643	 12				.25 .18	NO NO		 60	
A 8B	14		P4-14/I SHLD A8	2				.21 .25	NO NO		32, 34, 35	
A 8L			P3-543 P4-13/0	12 2			.32	.18 .23	NO NO		28 31	
A 8R			P3-443 P4-13/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 9	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 9A	17		SHLD A9 P3-344	 12				.25 .18	NO NO		 60	
A 9B	14		P4-8/0 SHLD A9	2				.23 .25	NO NO		31, 33	
A 9L			P3-244 P4-9/0	12 2			.32	.18 .23	NO NO		28 31	
A 9R			P3-144 P4-9/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 10	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 10A	17		SHLD A10 P3-644	 12				.25 .18	NO NO		 60	
A 10B	14		P4-8/I SHLD A10	2				.21 .25	NO NO		32, 34, 35	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 13 OF 72

MIL 2084 9-65

6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10L			P3-544 P4-7/0	12 2			.32	.18 .23	NO NO		28 31	
A 10R			P3-444 P4-7/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 11	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 11A	17		SHLD A11 P3-345	 12				.25 .18	NO NO		 60	
A 11B	14		P4-17/0 SHLD A11	2				.23 .25	NO NO		31, 33	
A 11L			P3-245 P4-18/0	12 2			.32	.18 .23	NO NO		28 31	
A 11R			P3-145 P4-18/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 12	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 12A	17		SHLD A12 P3-645	 12				.25 .18	NO NO		 60	
A 12B	14		P4-17/I SHLD A12	2				.21 .25	NO NO		32, 34, 35	
A 12L			P3-545 P4-16/0	12 2			.32	.18 .23	NO NO		28 31	
A 12R			P3-445 P4-16/I	12 2				.18 .21	NO NO		28 32, 34, 35	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 14 OF 72

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	13	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	13A	17		SHLD A13 P3-346	12				.25 .18	NO NO		60	SEE NOTE 20
A	13B	17		P5-15 SHLD A13	4				.15 .25	NO NO		30	
A	13L			P3-246 P5-14	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	13R			P3-146 P5-13	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	14	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	14A	17		SHLD A14 P3-646	12				.25 .18	NO NO		60	SEE NOTE 20
A	14B	17		P5-18 SHLD A14	4				.15 .25	NO NO		30	
A	14L			P3-546 P5-17	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	14R			P3-446 P5-16	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	15	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	15A	17		SHLD A15 P3-347	12				.25 .18	NO NO		60	SEE NOTE 20

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	15B	17		P5-3 SHLD A15	4				.15 .25	NO NO		30	
A	15L			P3-247 P5-2	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	15R			P3-147 P5-1	12 4				.18 .15	NO NO		60 30	
A	16	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	16A	17		SHLD A16 P3-647	12				.25 .18	NO NO		60	SEE NOTE 20
A	16B	17		P5-6 SHLD A16	4				.15 .25	NO NO		30	
A	16L			P3-547 P5-5	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	16R			P3-447 P5-4	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	17	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	17A	17		SHLD A17 P3-348	12				.25 .18	NO NO		60	SEE NOTE 20
A	17B	17		P5-21 SHLD A17	4				.15 .25	NO NO		30	
A	17L			P3-248 P5-20	12 4				.18 .15	NO NO		60 30	SEE NOTE 20

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	17R			P3-148 P5-19	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	18	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	18A	17		SHLD A18 P3-648	12				.25 .18	NO NO		60	SEE NOTE 20
A	18B	17		P5-24 SHLD A18	4				.15 .25	NO NO		30	
A	18L			P3-548 P5-23	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	18R			P3-448 P5-22	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	19	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	19A	17		SHLD A19 P3-349	12				.25 .18	NO NO		60	SEE NOTE 20
A	19B	17		P5-9 SHLD A19	4				.15 .25	NO NO		30	
A	19L			P3-249 P5-8	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	19R			P3-149 P5-7	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A	20	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	20L			P2-K11 P3-528	15 12				.18 .18	NO NO		60 60	
A	20R			P2-H11 P3-428	15 12				.18 .18	NO NO		60 60	
A	21	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	
A	21L			P2-K10 P3-328	15 12				.18 .18	NO NO		60 60	
A	21R			P2-H10 P3-228	15 12				.18 .18	NO NO		60 60	
A	22	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	22A	17		SHLD A22 P2-B33	15				.25 .18	NO NO		60	
A	22B	17		P3-329 SHLD A22	12				.18 .25	NO NO		60	
A	22L			P2-B34 P3-229	15 12				.18 .18	NO NO		60 60	
A	22R			P2-B35 P3-129	15 12				.18 .18	NO NO		60 60	
A	23	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	23A	17		SHLD A23 P2-D33	15				.25 .18	NO NO		60	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23B	17		P3-629 SHLD A23	12				.18 .25	NO NO		60	
A 23L			P2-D34 P3-529	15 12				.18 .18	NO NO		60 60	
A 23R			P2-D35 P3-429	15 12				.18 .18	NO NO		60 60	
A 24	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 24A	17		SHLD A24 P2-G33	15				.25 .18	NO NO		60	
A 24B	17		P3-330 SHLD A24	12				.18 .25	NO NO		60	
A 24L			P2-G34 P3-230	15 12				.18 .18	NO NO		60 60	
A 24R			P2-G35 P3-130	15 12				.18 .18	NO NO		60 60	
A 25	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 25A	17		SHLD A25 P2-C33	15				.25 .18	NO NO		60	
A 25B	17		P3-630 SHLD A25	12				.18 .25	NO NO		60	
A 25L			P2-C34 P3-530	15 12				.18 .18	NO NO		60 60	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P2-C35 P3-430	15 12				.18 .18	NO NO		60 60	
A 26	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 26A	17		SHLD A26 P2-F33	15				.25 .18	NO NO		60	
A 26B	17		P3-331 SHLD A26	12				.18 .25	NO NO		60	
A 26L			P2-F34 P3-231	15 12				.18 .18	NO NO		60 60	
A 26R			P2-F35 P3-131	15 12				.18 .18	NO NO		60 60	
A 27	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 27A	17		SHLD A27 P2-H33	15				.25 .18	NO NO		60	
A 27B	17		P3-631 SHLD A27	12				.18 .25	NO NO		60	
A 27L			P2-H34 P3-531	15 12				.18 .18	NO NO		60 60	
A 27R			P2-H35 P3-431	15 12				.18 .18	NO NO		28 28	
A 28	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 28A	17		SHLD A28 E4	22				.25 .38	NO NO			
A 28B	17		P5-33 SHLD A28	4				.15 .25	NO NO		30	
A 28L			P3-232 P5-32	12 4				.18 .15	NO NO		60 30	
A 28R			P3-132 P5-31	12 4				.18 .15	NO NO		60 30	
A 29	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 29A	17		SHLD A29 E4	22				.25 .38	NO NO			
A 29B	17		P5-30 SHLD A29	4				.15 .25	NO NO		30	
A 29L			P3-532 P5-29	12 4				.18 .15	NO NO		60 30	
A 29R			P3-432 P5-28	12 4				.18 .15	NO NO		60 30	
A 31	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 31A	17		SHLD A31 E4	22				.25 .38	NO NO			
A 31B	17		P5-36 SHLD A31	4				.15 .25	NO NO		30	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31L			P3-533 P5-35	12 4				.18 .15	NO NO		60 30	
A 31R			P3-433 P5-34	12 4				.18 .15	NO NO		60 30	
A 32	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 32A	17		SHLD A32 E4	22				.25 .38	NO NO			
A 32B	17		P5-39 SHLD A32	4				.15 .25	NO NO		30	
A 32L			P3-234 P5-38	12 4				.18 .15	NO NO		60 30	
A 32R			P3-134 P5-37	12 4				.18 .15	NO NO		60 30	
A 33	17		P2-H8 P3-136	15 12				.18 .18	NO NO		60 60	
A 34	17		P2-K10 P3-336	15 12				.18 .18	NO NO		60 60	
A 35	14		P3-113 P9-37/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 36	14		P3-612 P9-37/0	12 6				.18 .23	NO NO		28 41, 33	
A 37	17		P3-512 P9-38	12 6				.18 .21	NO NO		60 37	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 38	14		P3-412 P9-36/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 39	14		P3-312 P9-36/0	12 6				.18 .23	NO NO		28 41, 33	
A 40	17		P3-112 P9-52	12 6				.18 .21	NO NO		60 37	
A 41	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 41A	17		SHLD A41 P3-111	 12				.25 .18	NO NO		 60	
A 41B	17		P9-32 SHLD A41	6				.21 .25	NO NO		37	
A 41L			P3-211 P9-31/0	12 6			 .22	.18 .23	NO NO		28 41	
A 41R			P3-311 P9-31/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 42	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 42A	17		SHLD A42 P3-410	 12				.25 .18	NO NO		 60	
A 42B	14		P9-2/I SHLD A42	6				.21 .25	NO NO		40, 51, 35	
A 42L			P3-510 P9-1/0	12 6			 .22	.18 .23	NO NO		28 41	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 23 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 42R			P3-610 P9-1/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 43	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 43A	17		SHLD A43 P3-110	 12				.25 .18	NO NO		 60	
A 43B	14		P9-2/0 SHLD A43	6				.23 .25	NO NO		41, 33	
A 43L			P3-210 P9-3/0	12 6			 .22	.18 .23	NO NO		28 41	
A 43R			P3-310 P9-3/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 44	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 44A	17		SHLD A44 P3-409	 12				.25 .18	NO NO		 60	
A 44B	14		P9-5/I SHLD A44	6				.21 .25	NO NO		40, 51, 35	
A 44L			P3-509 P9-4/0	12 6			 .22	.18 .23	NO NO		28 41	
A 44R			P3-609 P9-4/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 45	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 24 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45A	17		SHLD A45 P3-109	 12				.25 .18	NO NO		 60	
A 45B	14		P9-5/0 SHLD A45	6				.23 .25	NO NO		41, 33	
A 45L			P3-209 P9-6/0	12 6			 .22	.18 .23	NO NO		28 41	
A 45R			P3-309 P9-6/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 46	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 46A	17		SHLD A46 P3-408	 12				.25 .18	NO NO		 60	
A 46B	14		P9-8/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A 46L			P3-508 P9-7/0	12 6			 .22	.18 .23	NO NO		28 41	
A 46R			P3-608 P9-7/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 47	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 47A	17		SHLD A47 P3-108	 12				.25 .18	NO NO		 60	
A 47B	14		P9-8/0 SHLD A47	6				.23 .25	NO NO		41, 33	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 25 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47L			P3-208 P9-9/0	12 6			 .22	.18 .23	NO NO		28 41	
A 47R			P3-308 P9-9/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 48	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 48A	17		SHLD A48 P3-407	 12				.25 .18	NO NO		 60	
A 48B	14		P9-11/I SHLD A48	6				.21 .25	NO NO		40, 51, 35	
A 48L			P3-507 P9-10/0	12 6			 .22	.18 .23	NO NO		28 41	
A 48R			P3-607 P9-10/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 49	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 49A	17		SHLD A49 P3-107	 12				.25 .18	NO NO		 60	
A 49B	14		P9-11/0 SHLD A49	6				.23 .25	NO NO		41, 33	
A 49L			P3-207 P9-12/0	12 6			 .22	.18 .23	NO NO		28 41	
A 49R			P3-307 P9-12/I	12 6				.18 .21	NO NO		28 40, 51, 35	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 26 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 50	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 50A	17		SHLD A50 P3-406	 12				.25 .18	NO NO		 60	
A 50B	14		P9-14/I SHLD A50	6				.21 .25	NO NO		40, 51, 35	
A 50L			P3-506 P9-13/0	12 6			 .22	.18 .23	NO NO		28 41	
A 50R			P3-606 P9-13/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 51	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 51A	17		SHLD A51 P3-106	 12				.25 .18	NO NO		 60	
A 51B	14		P9-14/0 SHLD A51	6				.23 .25	NO NO		41, 33	
A 51L			P3-206 P9-15/0	12 6			 .22	.18 .23	NO NO		28 41	
A 51R			P3-306 P9-15/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 52	14		P3-213 P9-39/0	12 6				.18 .23	NO NO		28 41, 33	
A 53	14		P3-313 P9-39/I	12 6				.18 .21	NO NO		28 40, 51, 35	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 27 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 54	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 54A	17		SHLD A54 P3-405	 12				.25 .18	NO NO		 60	
A 54B	14		P9-17/I SHLD A54	6				.21 .25	NO NO		40, 51, 35	
A 54L			P3-505 P9-16/0	12 6			 .22	.18 .23	NO NO		28 41	
A 54R			P3-605 P9-16/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 55	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 55A	17		SHLD A55 P3-105	 12				.25 .18	NO NO		 28	
A 55B	14		P9-17/0 SHLD A55	6				.23 .25	NO NO		41, 33	
A 55L			P3-205 P9-18/0	12 6			 .22	.18 .23	NO NO		28 41	
A 55R			P3-305 P9-18/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 56	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 56A	17		SHLD A56 P3-404	 12				.25 .18	NO NO		 60	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 28 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 56B	14		P9-20/I SHLD A56	6				.21 .25	NO NO		40, 51, 35	
A 56L			P3-504 P9-19/0	12 6			 .22	.18 .23	NO NO		28 41	
A 56R			P3-604 P9-19/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 57	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 57A	17		SHLD A57 P3-104	 12				.25 .18	NO NO		 60	
A 57B	14		P9-20/0 SHLD A57	6				.23 .25	NO NO		41, 33	
A 57L			P3-204 P9-21/0	12 6			 .22	.18 .23	NO NO		28 41	
A 57R			P3-304 P9-21/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 58	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 58A	17		SHLD A58 P3-403	 12				.25 .18	NO NO		 60	
A 58B	14		P9-23/I SHLD A58	6				.21 .25	NO NO		40, 51, 35	
A 58L			P3-503 P9-22/0	12 6			 .22	.18 .23	NO NO		28 41	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 29 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 58R			P3-603 P9-22/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 59	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 59A	17		SHLD A59 P3-103	 12				.25 .18	NO NO		 60	
A 59B	14		P9-23/0 SHLD A59	6				.23 .25	NO NO		41, 33	
A 59L			P3-203 P9-24/0	12 6			 .22	.18 .23	NO NO		28 41	
A 59R			P3-303 P9-24/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 60	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 60A	17		SHLD A60 P3-402	 12				.25 .18	NO NO		 60	
A 60B	14		P9-26/I SHLD A60	6				.21 .25	NO NO		40, 51, 35	
A 60L			P3-502 P9-25/0	12 6			 .22	.18 .23	NO NO		28 41	
A 60R			P3-602 P9-25/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 61	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 30 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61A	17		SHLD A61 P3-102	 12				.25 .18	NO NO		 60	
A 61B	14		P9-26/0 SHLD A61	6				.23 .25	NO NO		41, 33	
A 61L			P3-202 P9-27/0	12 6			 .22	.18 .23	NO NO		28 41	
A 61R			P3-302 P9-27/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 62	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 62A	17		SHLD A62 P3-401	 12				.25 .18	NO NO		 60	
A 62B	14		P9-29/I SHLD A62	6				.21 .25	NO NO		40, 51, 35	
A 62L			P3-501 P9-28/0	12 6			 .22	.18 .23	NO NO		28 41	
A 62R			P3-601 P9-28/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 63	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 63A	17		SHLD A63 P3-101	 12				.25 .18	NO NO		 60	
A 63B	14		P9-29/0 SHLD A63	6				.23 .25	NO NO		41, 33	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63L			P3-201 P9-30/0	12 6			 .22	.18 .23	NO NO		28 41	
A 63R			P3-301 P9-30/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 64	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 64A	17		SHLD A64 P3-649	 12				.25 .18	NO NO		 60	SEE NOTE 20 SEE NOTE 20
A 64B	17		P5-12 SHLD A64	4				.15 .25	NO NO		30	
A 64L			P3-549 P5-11	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A 64R			P3-449 P5-10	12 4				.18 .15	NO NO		60 30	SEE NOTE 20
A 65	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 65A	17		SHLD A65 E4	 22				.25 .38	NO NO			
A 65B	17		P6-18 SHLD A65	5				.15 .25	NO NO		29	
A 65L			P3-215 P6-36	12 5				.18 .15	NO NO		60 29	
A 65R			P3-115 P6-19	12 5				.18 .15	NO NO		60 29	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 66	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 66A	17		SHLD A66 E4	 22				.25 .38	NO NO			
A 66B	17		P6-15 SHLD A66	5				.15 .25	NO NO		29	
A 66L			P3-415 P6-31	12 5				.18 .15	NO NO		60 29	
A 66R			P3-315 P6-30	12 5				.18 .15	NO NO		60 29	
A 67	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 67A	17		SHLD A67 E4	 22				.25 .38	NO NO			
A 67B	17		P6-1 SHLD A67	5				.15 .25	NO NO		29	
A 67L			P3-615 P6-5	12 5				.18 .15	NO NO		60 29	
A 67R			P3-515 P6-4	12 5				.18 .15	NO NO		60 29	
A 68	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 68A	17		SHLD A68 E4	 22				.25 .38	NO NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 68B	17		P6-26 SHLD A68	5				.15 .25	NO NO		29	
A 68L			P3-216 P6-11	12 5				.18 .15	NO NO		60 29	
A 68R			P3-116 P6-25	12 5				.18 .15	NO NO		60 29	
A 69	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 69A	17		SHLD A69 E4	 22				.25 .38	NO NO			
A 69B	17		P6-16 SHLD A69	5				.15 .25	NO NO		29	
A 69L			P3-416 P6-33	12 5				.18 .15	NO NO		60 29	
A 69R			P3-316 P6-17	12 5				.18 .15	NO NO		60 29	
A 70	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 70A	17		SHLD A70 E4	 22				.25 .38	NO NO			
A 70B	17		P6-13 SHLD A70	5				.15 .25	NO NO		29	
A 70L			P3-616 P6-28	12 5				.18 .15	NO NO		60 29	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	70R			P3-516 P6-27	12 5				.18 .15	NO NO		60 29	
A	71	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	71A	17		SHLD A71 E4	22				.25 .38	NO NO			
A	71B	17		P6-9 SHLD A71	5				.15 .25	NO NO		29	
A	71L			P3-217 P6-23	12 5				.18 .15	NO NO		60 29	
A	71R			P3-117 P6-22	12 5				.18 .15	NO NO		28 29	
A	72	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	72A	17		SHLD A72 P7-17	8				.25 .15	NO NO		30	
A	72B	17		P13-17 SHLD A72	1				.15 .25	NO NO		30	
A	72L			P7-33 P13-33	8 1				.15 .15	NO NO		30 30	
A	72R			P7-16 P13-16	6 1				.15 .15	NO NO		30 30	
A	73	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	73A	17		SHLD A73 P7-9	8				.25 .15	NO NO		30	
A	73B	17		P13-9 SHLD A73	1				.15 .25	NO NO		30	
A	73L			P7-21 P13-21	8 1				.15 .15	NO NO		30 30	
A	73R			P7-22 P13-22	8 1				.15 .15	NO NO		30 30	
A	74	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	74A	17		SHLD A74 P7-24	8				.25 .15	NO NO		30	
A	74B	17		P13-24 SHLD A74	1				.15 .25	NO NO		30	
A	74L			P7-23 P13-23	8 1				.15 .15	NO NO		30 30	
A	74R			P7-10 P13-10	8 1				.15 .15	NO NO		30 30	
A	75	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	75A	17		SHLD A75 P7-26	8				.25 .15	NO NO		30	
A	75B	17		P13-26 SHLD A75	1				.15 .25	NO NO		30	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	75L			P7-25 P13-25	8 1				.15 .15	NO NO		30 30	
A	75R			P7-11 P13-11	8 1				.15 .15	NO NO		30 30	
A	76	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	76A	17		SHLD A76 P7-13	8				.25 .15	NO NO		30	
A	76B	17		P13-13 SHLD A76	1				.15 .25	NO NO		30	
A	76L			P7-27 P13-27	8 1				.15 .15	NO NO		30 30	
A	76R			P7-12 P13-12	8 1				.15 .15	NO NO		30 30	
A	77	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	77A	17		SHLD A77 P7-30	8				.25 .15	NO NO		30	
A	77B	17		P13-30 SHLD A77	1				.15 .25	NO NO		30	
A	77L			P7-29 P13-29	8 1				.15 .15	NO NO		30 30	
A	77R			P7-14 P13-14	8 1				.15 .15	NO NO		30 30	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	78	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	
A	78A	17		SHLD A78 P7-32	8				.25 .15	NO NO		30	
A	78B	17		P13-32 SHLD A78	1				.15 .25	NO NO		30	
A	78L			P7-31 P13-31	8 1				.15 .15	NO NO		30 30	
A	78R			P7-15 P13-15	8 1				.15 .15	NO NO		30 30	
A	79	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A	79A	14		SHLD A79 P8-25/I	7				.25 .21	NO NO		32, 34, 35	
A	79B	17		P13-38 SHLD A79	1				.15 .25	NO NO		30	
A	79L			P8-24/O P13-62	7 1			.32	.23 .15	NO NO		31 30	
A	79R			P8-24/I P13-63	7 1				.21 .15	NO NO		32, 34, 35 30	
A	80	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	80L			P11-30 P13-56	9 1				.15 .15	NO NO		29 30	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	80R			P11-29	9				.15	NO		29	
				P13-81	1				.15	NO		30	
A	81	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	81L			P11-2	9				.15	NO		29	
				P13-1	1				.15	NO		30	
A	81R			P11-1	9				.15	NO		29	
				P13-2	1				.15	NO		30	
A	82	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	82L			P11-4	9				.15	NO		29	
				P13-4	1				.15	NO		30	
A	82R			P11-3	9				.15	NO		29	
				P13-3	1				.15	NO		30	
A	83	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	83L			P11-6	9				.15	NO		29	
				P13-6	1				.15	NO		30	
A	83R			P11-5	9				.15	NO		29	
				P13-5	1				.15	NO		30	
A	84	15				2.80	2.50				A,6B	20, 19	SEE NOTE 9
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	84A	17		SHLD A84					.25	NO			
				P7-36	8				.15	NO		30	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 39 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	84B	17		P13-36	1				.15	NO		30	
				SHLD A84					.25	NO			
A	84L			P7-35	8				.15	NO		30	
				P13-35	1				.15	NO		30	
A	84R			P7-18	8				.15	NO		30	
				P13-18	1				.15	NO		30	
A	85	15				2.80	2.50				A,6B	19, 20	SEE NOTE 9
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	85A	17		SHLD A85					.25	NO			
				P7-20	8				.15	NO		30	
A	85B	17		P13-20	1				.15	NO		30	
				SHLD A85					.25	NO			
A	85L			P7-37	8				.15	NO		30	
				P13-37	1				.15	NO		30	
A	85R			P7-19	8				.15	NO		30	
				P13-19	1				.15	NO		30	
A	86	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	86L			P11-38	9				.15	NO		29	
				P13-61	1				.15	NO		30	
A	86R			P11-37	9				.15	NO		29	
				P13-85	1				.15	NO		30	
A	87	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 40 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	87L			P11-40	9				.15	NO		29	
				P13-59	1				.15	NO		30	
A	87R			P11-39	9				.15	NO		29	
				P13-84	1				.15	NO		30	
A	88	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	88L			P11-42	9				.15	NO		29	
				P13-58	1				.15	NO		30	
A	88R			P11-41	9				.15	NO		29	
				P13-82	1				.15	NO		30	
A	89	27				2.30	2.00				A,6B	19, 20, 33	SEE NOTE 9
						2.30	2.00				A,6B	19, 20	SEE NOTE 9
A	89A	14		SHLD A89					.25	NO			
				P8-11/I	7				.21	NO		32, 34, 35	
A	89B	17		P13-42	1				.15	NO		30	
				SHLD A89					.25	NO			
A	89L			P8-10/O	7			.32	.23	NO		31	
				P13-66	1				.15	NO		30	
A	89R			P8-10/I	7				.21	NO		32, 34, 35	
				P13-41	1				.15	NO		30	
A	90	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	90A	14		SHLD A90					.25	NO			
				P8-8/O	7				.23	NO		31, 33	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 41 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	90B	17		P13-71	1				.15	NO		30	
				SHLD A90					.25	NO			
A	90L			P8-9/O	7			.32	.23	NO		31	
				P13-70	1				.15	NO		30	
A	90R			P8-9/I	7				.21	NO		32, 34, 35	
				P13-46	1				.15	NO		30	
A	91	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	91A	14		SHLD A91					.25	NO			
				P8-8/I	7				.21	NO		32, 34, 35	
A	91B	17		P13-47	1				.15	NO		30	
				SHLD A91					.25	NO			
A	91L			P8-7/O	7			.32	.23	NO		31	
				P13-48	1				.15	NO		30	
A	91R			P8-7/I	7				.21	NO		32, 34, 35	
				P13-72	1				.15	NO		30	
A	92	27				2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	92A	14		SHLD A92					.25	NO			
				P8-5/O	7				.23	NO		31, 33	
A	92B	17		P13-80	1				.15	NO		30	
				SHLD A92					.25	NO			
A	92L			P8-6/O	7			.32	.23	NO		31	
				P13-79	1				.15	NO		30	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 42 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 92R			P8-6/I P13-55	7 1				.21 .15	NO NO		32, 34, 35 30	
A 93	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 93A	14		SHLD A93 P8-5/I	7				.25 .21	NO NO		32, 34, 35	
A 93B	17		P13-40 SHLD A93	1				.15 .25	NO NO		30	
A 93L			P8-4/O P13-65	7 1			.32	.23 .15	NO NO		31 30	
A 93R			P8-4/I P13-64	7 1				.21 .15	NO NO		32, 34, 35 30	
A 94	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 94A	14		SHLD A94 P8-2/O	7				.25 .23	NO NO		31, 33	
A 94B	17		P13-52 SHLD A94	1				.15 .25	NO NO		30	
A 94L			P8-3/O P13-76	7 1			.32	.23 .15	NO NO		31 30	
A 94R			P8-3/I P13-77	7 1				.21 .15	NO NO		32, 34, 35 30	
A 95	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	RKS
A 95A	14		SHLD A95 P8-2/I	7				.25 .21	NO NO		32, 34, 35	
A 95B	17		P13-54 SHLD A95	1				.15 .25	NO NO		30	
A 95L			P8-1/O P13-78	7 1			.32	.23 .15	NO NO		31 30	
A 95R			P8-1/I P13-53	7 1				.21 .15	NO NO		32, 34, 35 30	
A 96	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 96A	14		SHLD A96 P8-11/O	7				.25 .23	NO NO		31, 33	
A 96B	17		P13-68 SHLD A96	1				.15 .25	NO NO		30	
A 96L			P8-12/O P13-67	7 1			.32	.23 .15	NO NO		31 30	
A 96R			P8-12/I P13-43	7 1				.21 .15	NO NO		32, 34, 35 30	
A 97	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 97A	17		SHLD A97 P8-14	7				.25 .18	NO NO		38	
A 97B	17		P13-45 SHLD A97	1				.15 .25	NO NO		30	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97L			P8-13/O P13-69	7 1			.32	.23 .15	NO NO		31 30	
A 97R			P8-13/I P13-44	7 1				.21 .15	NO NO		32, 34, 35 30	
A 98	14		P2-G19 P8-42/I	15 7				.18 .21	NO NO		28 32, 33	
A 99	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 99L			P2-A25 P4-23/O	15 2			.32	.18 .23	NO NO		28 31, 33	
A 99R			P2-A24 P4-23/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20, 33	
A 100L			P2-K30 P4-26/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100R			P2-K31 P4-26/O	15 2			.32	.18 .23	NO NO		28 31	
A 102	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 102L			P2-K7 P1-30	15 3				.18 .18	NO NO		60 38	
A 102R			P2-K6 P1-29	15 3				.18 .18	NO NO		60 38	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 103L			P2-D7 P1-23	15 3				.18 .18	NO NO		60 38	
A 103R			P2-D6 P1-22	15 3				.18 .18	NO NO		60 38	
A 104	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 104L			P2-C7 P1-19	15 3				.18 .18	NO NO		60 38	
A 104R			P2-C6 P1-18	15 3				.18 .18	NO NO		60 38	
A 105	17		P2-F8 P1-24	15 3				.18 .18	NO NO		60 38	
A 107	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 107L			E11 P1-28	14 3				.38 .18	NO NO		38	
A 107R			E13 P1-27	16 3				.38 .18	NO NO		38	
A 108	16				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 108L			P2-G12 P1-33	15 3				.18 .18	NO NO		60 39	SEE NOTE 20

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 108R			P2-D12 P1-32	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 108Y			P2-F12 P1-34	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 109	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 109L			P2-B14 P1-38	15 3				.18 .18	NO NO		60 38	
A 109R			P2-A14 P1-37	15 3				.18 .18	NO NO		60 38	
A 110	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 110L			P2-K13 P1-42	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 110R			P2-H13 P1-41	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 112	15				2.30 5.30	2.00 5.00				B,7 B,7	20 20	
A 112L			P11-35 P2-K14	9 15				.15 .18	NO NO		29 60	
A 112R			P11-34 P2-H14	9 15				.15 .18	NO NO		29 60	
A 114	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 114A	17		SHLD A114 E1	21				.25 .25	NO NO			
A 114W			P12-2/I P3-620	18 12				.21 .18	NO NO		35, 40, 51 28	
A 115	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	
A 115A	17		SHLD A115 E1	21				.25 .25	NO NO			
A 115W			P12-9/I P3-121	18 12				.21 .18	NO NO		35, 40, 51 28	
A 116	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 116A	17		SHLD A116 E1	21				.25 .25	NO NO			
A 116W			P12-3/I P3-221	18 12				.21 .18	NO NO		35, 40, 51 28	
A 117	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 117A	17		SHLD A117 E1	21				.25 .25	NO NO			
A 117W			P12-10/I P3-321	18 12				.21 .18	NO NO		35, 40, 51 28	
A 118	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 118A	17		SHLD A118 E1	21				.25 .25	NO NO			
A 118W			P12-3/0 P3-421	18 12			.22	.23 .18	NO NO		41 28	
A 119	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 119A	17		SHLD A119 E1	21					NO NO			
A 119W			P12-10/0 P3-521	18 12			.22	.23 .18	NO NO		41 28	
A 120	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 120A	17		SHLD A120 E2	19				.25 .25	NO NO			
A 120W			P12-1/0 P3-621	18 12				.23 .18	NO NO		41 28	
A 121	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 121A	17		SHLD A121 E2	19				.25 .25	NO NO			
A 121W			P12-11/I P3-122	18 12				.21 .18	NO NO		35, 40, 51 28	
A 122	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 122A	17		SHLD A122 E2	19				.25 .25	NO NO			
A 122W			P12-1/I P3-222	18 12				.21 .18	NO NO		35, 40, 51 28	
A 123	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 123A	17		SHLD A123 E2	19				.25 .25	NO NO			
A 123W			P12-11/0 P3-322	18 12				.23 .18	NO NO		41 28	
A 124	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 124L			P2-B26 P4-19/0	15 2			.32	.18 .23	NO NO		28 31	
A 124R			P2-A26 P4-19/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 125	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 125L			P2-B28 P4-20/0	15 2			.32	.18 .23	NO NO		28 31	
A 125R			P2-A28 P4-20/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 126	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126L			P2-B30	15				.18	NO		28	
			P4-21/0	2			.32	.23	NO		31	
A 126R			P2-A30	15				.18	NO		28	
			P4-21/I	2				.21	NO		32, 34, 35	
A 127	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 127L			P11-32	9				.15	NO		29	
			P2-B15	15				.18	NO		60	
A 127R			P11-31	9				.15	NO		29	
			P2-A15	15				.18	NO		60	
A 128	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 128L			P2-A21	15				.18	NO		60	
			P3-338	12				.18	NO		60	
A 128R			P2-B21	15				.18	NO		60	
			P3-238	12				.18	NO		60	
A 129	17		P2-B17	15				.18	NO		60	
			P3-138	12				.18	NO		60	
A 130	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	
A 130L			P2-K28	15				.18	NO		28	
			P4-25/0	2			.32	.23	NO		31	
A 130R			P2-K29	15				.18	NO		28	
			P4-25/I	2				.21	NO		32, 34, 35	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 51 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 131	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 131L			P2-G5	15				.18	NO		60	
			E11	14				.38	NO			
A 131R			P2-G4	15				.18	NO		60	
			E10	13				.38	NO			
A 132			DELETED									
A 132L			DELETED									
A 132R			DELETED									
A 134	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 134A	17		SHLD A134					.25	NO			
			P2-G23	15				.18	NO		28	
A 134B	14		P8-25/0	7				.23	NO		31, 33	
			SHLD A134					.25	NO			
A 134L			P2-K23	15				.18	NO		28	
			P8-26/0	7			.32	.23	NO		31	
A 134R			P2-H23	15				.18	NO		28	
			P8-26/I	7				.21	NO		32, 34, 35	
A 135	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 52 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 135A	17		SHLD A135					.25	NO			
			P2-G24	15				.18	NO		60	
A 135B	14		P8-16/I	7				.21	NO		32, 34, 35	
			SHLD A135					.25	NO			
A 135L			P2-K24	15				.18	NO		28	
			P8-15/0	7			.32	.23	NO		31	
A 135R			P2-H24	15				.18	NO		28	
			P8-15/I	7				.21	NO		32, 34, 35	
A 136	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 136A	17		SHLD A136					.25	NO			
			P2-G25	15				.18	NO		60	
A 136B	14		P8-16/0	7				.23	NO		31, 33	
			SHLD A136					.25	NO			
A 136L			P2-K25	15				.18	NO		28	
			P8-17/0	7			.32	.23	NO		31	
A 136R			P2-H25	15				.18	NO		28	
			P8-17/I	7				.21	NO		32, 34, 35	
A 137	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 137A	17		SHLD A137					.25	NO			
			P2-G21	15				.18	NO		60	
A 137B	14		P8-19/I	7				.21	NO		32, 34, 35	
			SHLD A137					.25	NO			

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 53 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 137L			P2-K21	15				.18	NO		28	
			P8-18/0	7			.32	.23	NO		31	
A 137R			P2-H21	15				.18	NO		28	
			P8-18/I	7				.21	NO		32, 34, 35	
A 139	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 139A	17		SHLD A139					.25	NO			
			P2-G22	15				.18	NO		60	
A 139B	14		P8-19/0	7				.23	NO		31, 33	
			SHLD A139					.25	NO			
A 139L			P2-K22	15				.18	NO		28	
			P8-20/0	7			.32	.23	NO		31	
A 139R			P2-H22	15				.18	NO		28	
			P8-20/I	7				.21	NO		32, 34, 35	
A 141	14		P12-4/I	18				.21	NO		40, 51, 35	
			P2-F9	15				.18	NO		28	
A 142	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 142L			P11-12	9				.15	NO		29	
			P2-D1	15				.18	NO		60	
A 142R			P11-11	9				.15	NO		29	
			P2-D2	15				.18	NO		60	
A 144	27				3.30	3.00				A,6A	33, 19, 20	
					5.30	5.00				B,7	20	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 54 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 144A	17		SHLD A144 E2	 19				.25 .25	NO NO			
A 144L			P12-16/0 P2-G28	18 15			.22	.23 .18	NO NO		41 28	
A 144R			P12-16/I P2-G31	18 15				.21 .18	NO NO		35, 40, 51 28	
A 145	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 20 20	SEE NOTE 9
A 145A	17		SHLD A145 E2	 19				.25 .25	NO NO			
A 145W			P12-15/0 P2-G30	18 15				.23 .18	NO NO		41 28	
A 147	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 147A	17		SHLD A147 E2	 19				.25 .25	NO NO			
A 147W			P12-15/I P2-G29	18 15				.21 .18	NO NO		35, 40, 51 28	
A 154	27				2.80 2.80	2.50 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 154B	17		P3-347 SHLD A154	12				.18 .25	NO NO			SEE NOTE 20
A 154L			P14-34/0 P3-247	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 55 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154R			P14-34/I P3-147	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 155	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 155B	17		P3-647 SHLD A155	12				.18 .25	NO NO			SEE NOTE 20
A 155L			P14-35/0 P3-547	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 155R			P14-35/I P3-447	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 156	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 156B	17		P3-349 SHLD A156	12				.18 .25	NO NO			SEE NOTE 20
A 156L			P14-32/0 P3-249	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 156R			P14-32/I P3-149	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 157	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 157B	17		P3-649 SHLD A157	12				.18 .25	NO NO			SEE NOTE 20
A 157L			P14-33/0 P3-549	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 56 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 157R			P14-33/I P3-449	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 158	14		P12-2/0 P3-119	18 12				.23 .18	NO NO		41, 33 28	
A 159	14		P12-9/0 P3-422	18 12				.23 .18	NO NO		41, 33 28	
A 164	27				2.80 2.80	2.50 2.50				B,7 B,7	20, 33 20	
A 164L			P12-31/0 P13-8	17 1			.22	.23 .15	NO NO		41 30	
A 164R			P12-31/I P13-7	17 1				.21 .15	NO NO		40, 51, 35 30	
A 165	27				2.80 5.30	2.50 5.00				B,7 B,7	20, 33 20	
A 165L			P12-46/0 P2-A23	18 15			.22	.23 .18	NO NO		41 28	
A 165R			P12-46/I P2-B23	18 15				.21 .18	NO NO		40, 51, 35 28	
A 171	44				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 171L			P12-4/0 E14-8	18 23			.22	.23 .25	NO NO		41, 33	
A 171R			P12-33/0 P2-G8	18 15			.22	.23 .18	NO NO		41, 33 28	 SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 57 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 171Y			P12-33/I E13	18 16				.21 .38	NO NO		40, 51, 35	
A 178	15				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 178L			P11-14 P2-C1	9 15				.15 .18	NO NO		29 60	
A 178R			P11-13 P2-C2	9 15				.15 .18	NO NO		29 60	
A 284	14		P2-A22 P8-41	15 7				.18 .18	NO NO		28 38	
A 344	16				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 344L			P2-F14 P1-46	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20
A 344R			P2-G14 P1-45	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20
A 344Y			P2-D14 P1-44	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20
A 345	15				3.30 3.30	3.00 3.00				B,7 B,7	20 20	
A 345L			E11 P1-26	14 3				.38 .18	NO NO		 38	
A 345R			E13 P1-25	16 3				.38 .18	NO NO		 38	

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 58 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 346	15				3.80	3.50				B,7	20	
					3.80	3.50				B,7	20	
A 346L			E11	14				.38	NO			
			P1-26	3				.18	NO		38	
A 346R			E13	16				.38	NO			
			P1-25	3				.18	NO		38	
A 347	15				3.80	3.50				B,7	20	
					3.80	3.50				B,7	20	
A 347L			E11	14				.38	NO			
			P1-28	3				.18	NO		38	
A 347R			E13	16				.38	NO			
			P1-27	3				.18	NO		38	
A 348	17		P2-A8	15				.18	NO		28	
			E13	16				.38	NO			
A 348L			DELETED									
A 348R			DELETED									
A 349	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 349L			P2-G7	15				.18	NO		60	
			P1-19	3				.18	NO		38	
A 349R			P2-G6	15				.18	NO		60	
			P1-18	3				.18	NO		38	

SIZE	CODE IDENT NO.			
A	99974	6900044		
SCALE-NONE	REV LTR	F	SHEET 59 OF 72	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 350	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 350L			P2-B7	15				.18	NO		60	
			P1-23	3				.18	NO		38	
A 350R			P2-B6	15				.18	NO		60	
			P1-22	3				.18	NO		38	
A 351	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 351L			P2-F7	15				.18	NO		60	
			P1-21	3				.18	NO		38	
A 351R			P2-F6	15				.18	NO		60	
			P1-20	3				.18	NO		38	
A 352	15				5.30	5.00				B,7	20	
					3.80	3.50				B,7	20	
A 352L			P2-A7	15				.18	NO		60	
			P1-21	3				.18	NO		38	
A 352R			P2-A6	15				.18	NO		60	
			P1-20	3				.18	NO		38	
A 353	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 353L			P2-A5	15				.18	NO		60	
			E11	14				.38	NO			
A 353R			P2-A4	15				.18	NO		60	
			E10	13				.38	NO			

SIZE	CODE IDENT NO.			
A	99974	6900044		
SCALE-NONE	REV LTR	F	SHEET 60 OF 72	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 354	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 354L			P2-B5	15				.18	NO		60	
			E11	14				.38	NO			
A 354R			P2-B4	15				.18	NO		28	
			E10	13				.38	NO			
A 355	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 355L			P2-C5	15				.18	NO		60	
			E11	14				.38	NO			
A 355R			P2-C4	15				.18	NO		60	
			E10	13				.38	NO			
A 356	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 356L			P2-D5	15				.18	NO		60	
			E11	14				.38	NO			
A 356R			P2-D4	15				.18	NO		60	
			E10	13				.38	NO			
A 357	15				5.30	5.00				B,7	20	
					4.30	4.00				B,7	20	
A 357L			P2-F5	15				.18	NO		60	
			E11	14				.38	NO			
A 357R			P2-F4	15				.18	NO		60	
			E10	13				.38	NO			

SIZE	CODE IDENT NO.			
A	99974	6900044		
SCALE-NONE	REV LTR	F	SHEET 61 OF 72	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 358	15				5.30	5.00				A,6B	19, 20	
					2.60	2.30				A,6B	19, 20	
A 358A	17		SHLD A358					.25	NO			
			E4					.38	NO			
A 358B	17		P5-42	4				.15	NO		30	
			SHLD A358					.25	NO			
A 358L			P3-337	12				.18	NO		60	
			P5-41	4				.15	NO		30	
A 358R			P3-237	12				.18	NO		60	
			P5-40	4				.15	NO		30	
A 359	15				5.30	5.00				A,6B	19, 20	
					2.60	2.30				A,6B	19, 20	
A 359A	17		SHLD A359					.25	NO			
			E4					.38	NO			
A 359B	17		P5-45	4				.15	NO		30	
			SHLD A359					.25	NO			
A 359L			P3-537	12				.18	NO		60	
			P5-44	4				.15	NO		30	
A 359R			P3-437	12				.18	NO		60	
			P5-43	4				.15	NO		30	
A 360	14		P3-611	12				.18	NO		28	
			P9-33/0	6				.23	NO		41, 33	
A 361	15				5.30	5.00				B,7	20	
					2.60	2.30				A,6B	19, 20	

SIZE	CODE IDENT NO.			
A	99974	6900044		
SCALE-NONE	REV LTR	F	SHEET 62 OF 72	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 361B	17		P5-81 SHLD A361	4				.15 .25	NO NO		30	
A 361L			P2-K15 P5-83	15 4				.18 .15	NO NO		60 30	
A 361R			P2-H15 P5-82	15 4				.18 .15	NO NO		60 30	
A 365	14		P14-48/I P1-12	18 3				.21 .18	NO NO		40, 51, 35 38	
A 366	17		P3-236 E12	12 11				.18 .38	NO NO		60	
A 367	17		P3-436 E12	12 11				.18 .38	NO NO		60	
A 385	53				3.80 3.80	3.50 3.50				B,7 B,7	59 59	
A 385L			P10-B E11	10 14				.28 .38	YES NO			
A 385R			P10-A E10	10 13				.28 .38	YES NO			
A 387	18		P10-H E13	10 16				.28 .38	YES NO			
A 397	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 397L			P2-K12 P1-42	15 3				.18 .18	NO NO		60	SEE NOTE 20

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 397R			P2-H12 P1-41	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 398L			P2-F11 P1-34	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398R			P2-D11 P1-32	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398Y			P2-G11 P1-33	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 399L			P2-F13 P1-46	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399R			P2-D13 P1-44	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399Y			P2-G13 P1-45	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 417	14		P14-48/O P1-13	18 3			.22	.23 .18	NO NO		41, 33 38	
A 420	14		P2-G20 P8-44/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 421	14		P2-H20 P3-44/O	15 7				.18 .23	NO NO		28 31, 33	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 424	17		P2-G18 P4-22	15 2				.18 .18	NO NO		60 38	
A 426	18		P10-M E12	10 11				.28 .38	YES NO			
A 442	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 442B	17		P3-646 SHLD A442	12				.18 .25	NO NO			SEE NOTE 20
A 442L			P12-24/O P3-546	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 442R			P12-24/I P3-446	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 443	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 443B	17		P3-348 SHLD A443	12				.18 .25	NO NO			SEE NOTE 20
A 443L			P12-25/O P3-248	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 443R			P12-25/I P3-148	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 444	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 444B	17		P3-648 SHLD A444	12				.18 .25	NO NO			SEE NOTE 20

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 444L			P12-26/O P3-548	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 444R			P12-26/I P3-448	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 445	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 445B	17		P3-346 SHLD A445	12				.18 .25	NO NO			SEE NOTE 20
A 445L			P12-23/O P3-246	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 445R			P12-23/I P3-146	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 446	18		P10-E E10	10 13				.28 .38	YES NO			
A 449	18		P10-G E11	10 14				.28 .38	YES NO			
A 450	18		P10-N E11	10 14				.28 .38	YES NO			
A 453	18		P10-U P10-C*	10 10				.28 .28	YES YES			
A 454	18		P10-F E13	10 16				.28 .38	YES NO			
A 455	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 455A	17		SHLD A455 E4	 22				.25 .38	NO NO			
A 455B	17		P5-27 SHLD A455	4				.15 .25	NO NO		30	
A 455L			P3-233 P5-26	12 4				.18 .15	NO NO		28 30	
A 455R			P3-133 P5-25	12 4				.18 .15	NO NO		60 30	
A 456	15				5.30 2.60	5.00 2.30				B,7 B,7	20 20	
A 456L			P2-G16 P5-80	15 4				.18 .15	NO NO		60 30	
A 456R			P2-H16 P5-79	15 4				.18 .15	NO NO		60 30	
A 457	44				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 457L			E14-B P11-9	23 9				.25 .15	NO NO		 29	
A 457R			P2-G8 P11-7	15 9				.18 .15	NO NO		 29	SEE NOTE 20
A 457Y			E13 P11-8	16 9				.38 .15	NO NO		 29	
A 458	18		E1 E3	21 20				.25 .25	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 67 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG.	ACCESSORY ITEMS	REMARKS
A 459	18		E2 E3	19 20				.25 .25	NO NO			
A 460	18		E3 P12-44	20 18				.25 .25	NO NO		 36	
A 461	17		P9-55 P3-438	6 12				.21 .18	NO NO		37 60	
A 462	17		E4	22				.38	NO			
A 463	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 463L			P11-66 E14-B	9 23				.15 .25	NO NO		29	
A 463R			P11-65 P2-A27	9 15				.15 .18	NO NO		29 60	
A 464	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 464L			P11-68 E14-B	9 23				.15 .25	NO NO		29	
A 464R			P11-67 P2-A29	9 15				.15 .18	NO NO		29 60	
A 465	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 465L			P11-70 E14-B	9 23				.15 .25	NO NO		29	

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 68 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 465R			P11-69 P2-A31	9 15				.15 .18	NO NO		29 60	
A 466	14		P2-H17 P8-42/0	15 7				.25 .23	NO NO		28 31, 34, 35	
A 467	17		P6-37 P6-38	5 5				.15 .15	NO NO		29 29	
A 468	14		P1-50/I P1-50/0	3 3				.21 .23	NO NO		31, 33 32, 34, 35	
A 469	14		P9-40/I P3-522	6 12				.21 .18	NO NO		40, 51, 35 28	
A 470	14		P9-40/0 P3-622	6 12				.23 .18	NO NO		41, 33 28	
A 471	17		P2-K4 E13	15 16				.18 .38	NO NO		60	
A 472	17		P2-C8 P1-2	15 3				.18 .18	NO NO		60 38	
A 473	17		P2-B8 P1-55	15 3				.18 .18	NO NO		60 38	
A 474	27				3.30 5.30	3.00 5.00				B,7 B,7	20, 33 20	SEE NOTE 9
A 474L			P12-47/0 P2-F2	18 15			.22	.23 .16	NO NO		41 28	
A 474R			P12-47/I P2-F1	18 15				.21 .18	NO NO		40, 51, 35 28	

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 69 OF 72

MIL 2084 9-65

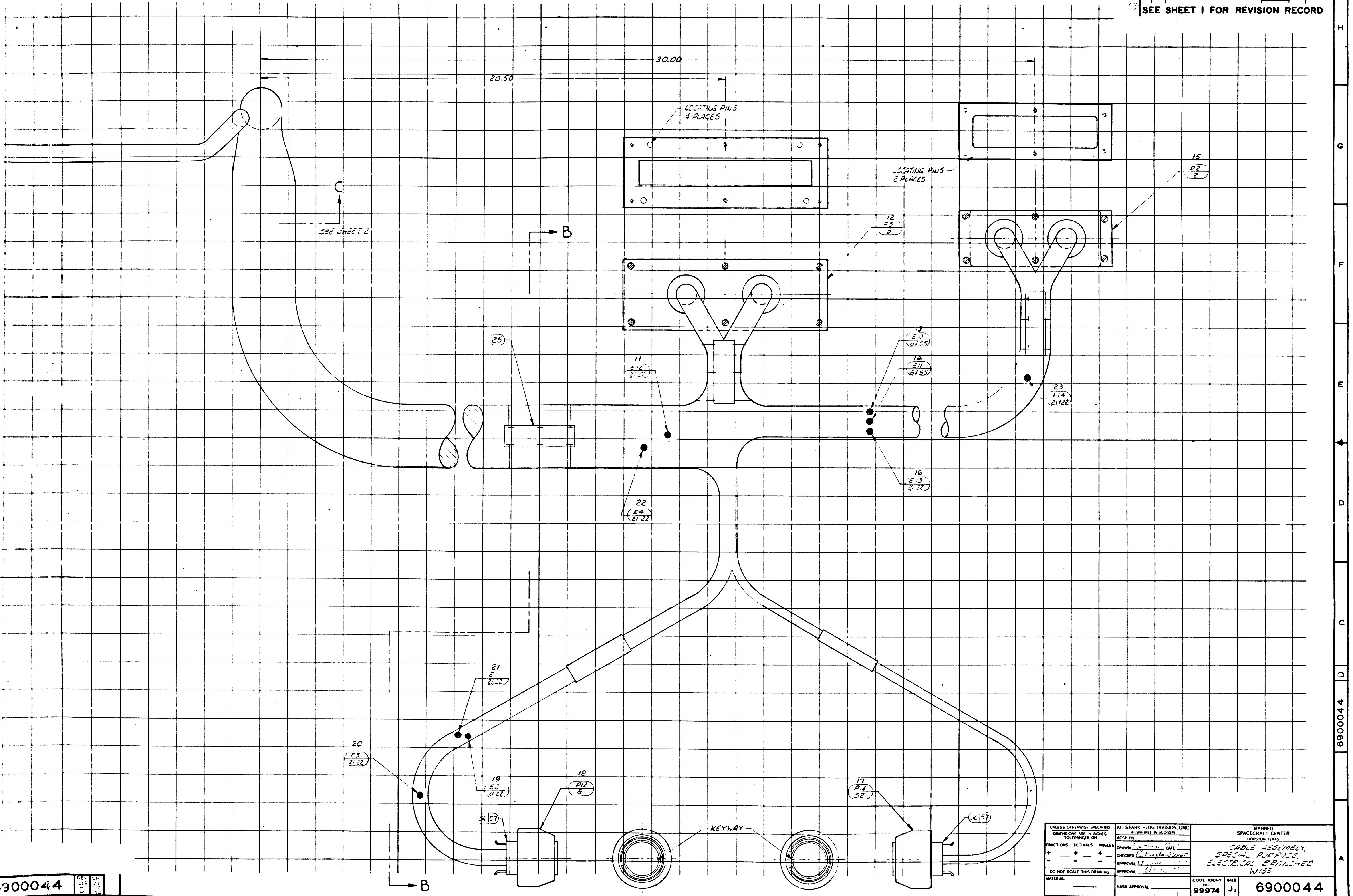
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 475	17		E14-B P2-G9	23 15				.25 .18	NO NO		 60	
A 476	17		P12-12/0 P2-B27	18 15				.23 .18	NO NO		41, 33 60	
A 477	14		P12-12/I P2-B29	18 15				.21 .18	NO NO		51, 40, 35 60	
A 478	14		P12-14/I P2-B31	18 15				.21 .18	NO NO		51, 40, 35 60	
A 479	17		P12-14/0 E14-B	18 23				.23 .25	NO NO		41, 33	

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 70 OF 72

MIL 2084 9-65

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

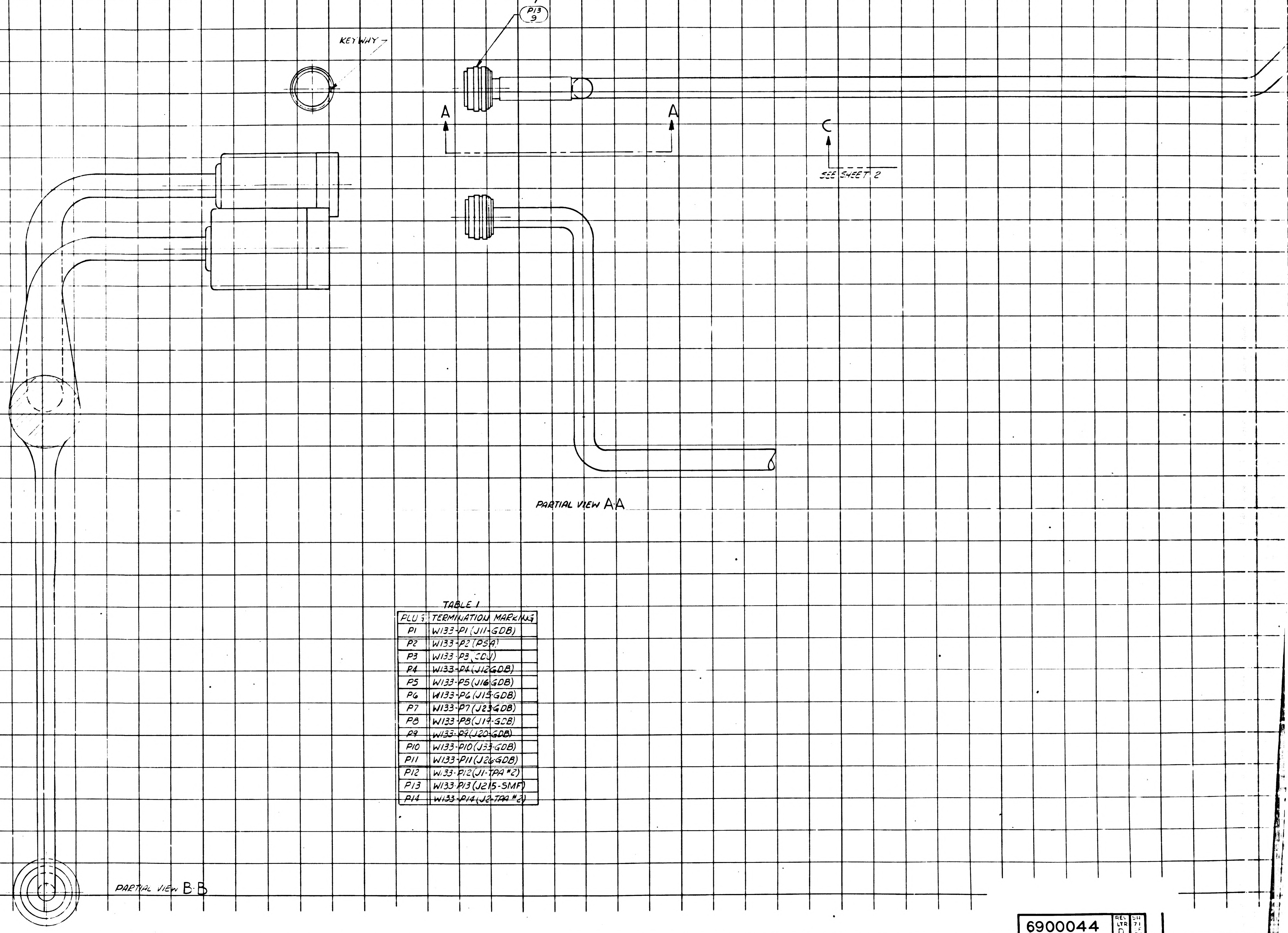
SEE SHEET 1 FOR REVISION RECORD


30.00
20.50
LOCATING PINS
4 PLACES
LOCATING PINS
2 PLACES
C
SEE SHEET 2
B
B
15
P2
2
12
E3
3
25
11
E12
21,22
13
E10
51,55
14
E11
51,55
23
E14
21,22
16
E13
21,22
22
E4
21,22
21
E1
21,22
20
E3
21,22
19
E2
21,22
18
P12
8
17
P14
52
56 57
56 57
KEYWAY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + — + — + — - - -	AC SPARK PLUG DIVISION, GMC MILWAUKEE WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON TEXAS
	ACSP PN	
DO NOT SCALE THIS DRAWING	DRAWN [illegible] DATE CHECKED C. Kopla 10-22-65 APPROVAL [illegible] APPROVAL [illegible]	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL BRANCHED W133
MATERIAL —	NASA APPROVAL	CODE IDENT NO 99974 · SIZE J2 · 6900044
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 1:1 · SHEET 7 OF 7

6900044 REV D SH 7

2/6900044



PARTIAL VIEW AA

PARTIAL VIEW B-B

TABLE I

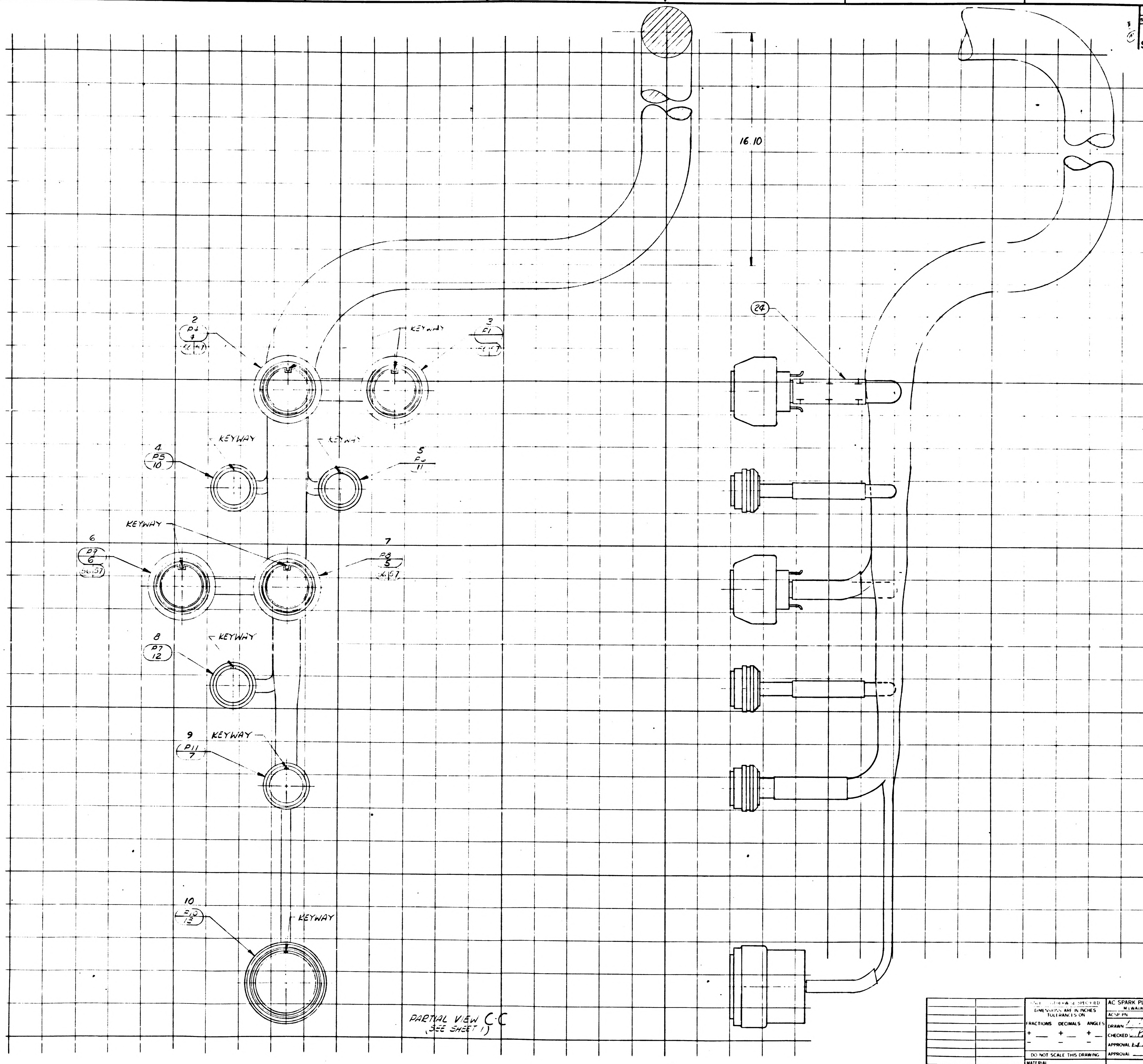
PLUG	TERMINATION MARKING
P1	W133-P1 (J11-GDB)
P2	W133-P2 (PSA)
P3	W133-P3 (CDU)
P4	W133-P4 (J12-GDB)
P5	W133-P5 (J16-GDB)
P6	W133-P6 (J15-GDB)
P7	W133-P7 (J23-GDB)
P8	W133-P8 (J19-GDB)
P9	W133-P9 (J20-GDB)
P10	W133-P10 (J33-GDB)
P11	W133-P11 (J26-GDB)
P12	W133-P12 (J1-TPA #2)
P13	W133-P13 (J215-SMF)
P14	W133-P14 (J2-TPA #2)

6900044 REV LTR D SH 71 OF 72

4400098

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO		

SEE SHEET I FOR REVISION RECORD


16.10
24
2
P4
4
56 57
KEYWAY
3
F1
56 57
KEYWAY
4
P5
10
KEYWAY
5
P6
11
KEYWAY
6
P9
6
56 57
7
P8
5
56 57
KEYWAY
8
P7
12
9
P11
7
KEYWAY
10
P10
13
KEYWAY
8
7
6
5
4
3
2
1
H
G
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E
D
C
B
A
MX-

PARTIAL VIEW C-C
(SEE SHEET 1)

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
DATE
CHECKED Pacyda 10 SEP 65
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL BRANCHED
W 133

CODE IDENT NO 99974
SIZE E
6900044
SCALE 1/1
SHEET 72 OF 72

6900044 D

4400098

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	REPLACES REV(-) WITH CHANGE PER MXC 204908; WAS "C" SIZE WORD DRAWING	17SEP 65	PHG EF
		B	REVISED PER MXC-206061	19 OCT. 65	JWP EF
		Ⓜ C	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	RLP CW
		D	REVISED PER TDRR 24142	24 NOV 65	LK MEM
		Ⓜ E	REVISED PER TDRR 24173	29 NOV 65	RCP EF
		Ⓜ F	REVISED PER TDRR 24858	26 DEC 65	JWP W.S.
		G	REVISED PER TDRR 24880	3 JAN 66	CRK JFK

REV		F	G	F	F	F	F	F	F	F	F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	G
SHEET		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS	REV				G	G	F	F	G	F	G	F	G	F	F	F	F	F	G	G	G	F	F	F			
OF SHEETS	SHEET				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN A.J. FLUDER 19AUG65 DATE
CHECKED C. PIOJDA 10SEP65
APPROVAL R. PIERINI 10SEP65
APPROVAL Yedinan 10/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL

CABLE ASSEMBLY
SPECIAL PURPOSE
BRANCHED ELECTRICAL
W133

CODE IDENT NO. 99974
SIZE A
6900044
REV G

CONTRACT NAS9-497
SCALE ——
SHEET 1 OF 72

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	F														
48	F														
49	F														
50	F														
51	F														
52	F														
53	F														
54	F														
55	G														
56	G														
57	G														
58	G														
59	G														
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61	F														
62	F														
63	F														
64	F														
65	G														
66	G														
67	G														
68	F														
69	F														
70	G														
71	G														
72	D														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION G

NASA DRAWING NO.
6900044
SHEET 2 OF 72

NOTE NUMBER — GENERAL NOTES — DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
  A - ND1002071
  B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-C-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 LACE HARNESS USING ITEM 26.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019.

6 APPLY LEAD IDENTIFICATIONS PER ND 1002019.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 POSITION IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
  A - FROM END SHIELD
  B - TO END SHIELD
  L - WHITE WITH BLUE TRACER
  R - WHITE WITH RED TRACER.
  W - WHITE
  Y - WHITE WITH YELLOW TRACER.

11 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 3 OF 72

NOTE NUMBER — GENERAL NOTES — DESCRIPTION

12 ITEMS 50 (13) AND ITEM 29 (85) SUPPLIED WITH ITEM 7.
ITEMS 50 (13) AND ITEM 30 (85) SUPPLIED WITH ITEMS 9, 10 AND 12.
ITEM 50(9) AND ITEM 29 (61) SUPPLIED WITH ITEM 11.

13 SECURE TO CABLE USING ITEM 26, MARKING TO READ AWAY FROM CONNECTOR ALIGN CENTER LINE OF BAND AND OF ASSOCIATED CONNECTOR MASTER KEY SLOT TO BE COLINEAR WITHIN + OR -0.25 IN.

14 MARK IDENTIFICATION BANDS AS NOTED IN TABLE 1,.12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

15 FILL THE SPACE BETWEEN WIRE BUNDLE AND STRAIN RELIEF CLAMP USING ITEM 23 TO SECURE WIRE BUNDLE IN THE CLAMP.

16 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

17 DELETED

18 SOLDER PER MIL-S-6872 (ES2505-1) USING ITEM 48 OR ITEMS 46 AND 47.

19 SERIALIZE PER ND1002023.

20 LEADS USE COMMON ACCESSORY

21 IN CIRCUIT POINT FIELD
  I - INDICATES INNER LEAD
  O - INDICATES OUTER LEAD

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 4 OF 72

NOTE NUMBER — GENERAL NOTES — DESCRIPTION

22 TYPICAL INSTALLATION OF CONTACTS AND ASSOCIATED HARDWARE--- -
ASSEMBLE ITEM 33 OVER BOTH LEADS (I AND O). ASSEMBLE ITEM 35, ITEM 34 OR 51, AND ITEM 32 OR 40 TO INNER LEAD IN ORDER LISTED. CRIMP ITEM 32 OR 40. ASSEMBLE ITEM 31 OR 41 TO ITEM 32 OR 40. SLIDE ITEM 35 OVER ITEM 31 OR 41 UNTIL SEATED. LAYOUTER LEAD AGAINST ITEM 31 OR 41 IN OPEN SECTION OF ITEM 35. SLIDE ITEM 33 FORWARD AGAINST SPRING AND CRIMP.

23 DELETED

24 DELETED

25 ASSEMBLE PER ND1002032.

26 ON TO END OF LEAD A360, ADD ITEMS 40,31 AND 35. CRIMP A WIRE STUB (1 INCH MAX) OF 24AWG WIRE (ITEM 14) IN ITEM 40 TO PROPERLY ASSEMBLE CONTACT PER NOTE 22. GLYPTAL STUB END AFTER ASSEMBLY

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR G	SHEET 5 OF 72

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	1	1	1897215-004	CONNECTOR, PLUG ELEC.
	2	1	6900050-011	CONNECTOR, PLUG ELEC.
	3	1	2900714-011	CONNECTOR, PLUG ELEC.
8	4	1	1897215-005	CONNECTOR, PLUG ELEC.
8	5	1	1897215-003	CONNECTOR, PLUG ELEC.
8	6	1	1897215-013	CONNECTOR, PLUG ELEC.
8	7	1	1897250-001	CONNECTOR, PLUG ELEC.
8	8	1	1897215-011	CONNECTOR, PLUG ELEC.
8	9	1	1897249-204	CONNECTOR, PLUG ELEC.
8	10	1	1897249-001	CONNECTOR, PLUG ELEC.
8	11	1	1897250-006	CONNECTOR, PLUG ELEC.
8	12	1	1897249-004	CONNECTOR, PLUG ELEC.
8	13	1	1897232-231	CONNECTOR, PLUG ELEC.
	14	1	6900044-001	WIRE ND1002181 TYPE 1, CLASS 1, 24AWG, WHT. 100FT. TOTAL LENGTH
	15	1	6900044-002	WIRE ND1002181 TYPE 2, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU 411FT. TOTAL LENGTH
	16	1	6900044-003	WIRE ND1002181 TYPE 3, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU, WHT/YEL 24FT. TOTAL LENGTH

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 6 OF 72

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900044-004	WIRE ND1002181, TYPE 1, CLASS 1, 22AWG, WHT. 136FT. TOTAL LENGTH
	18	1	6900044-005	WIRE ND1002181 TYPE 1, CLASS 1, 16AWG, WHT 44FT TOTAL LENGTH
8	19	179	1010763- 2	SOLDER SLEEVE
8	20	298	1010490-228	INSULATION SLEEVING
8	21	8	1016006-002	SPLICE REDUCER
8	22	8	1010490-258	INSULATION SLEEVING
	23	AR	1901390	FILLER TAPE
8	24	14	1016128-041	BAND IDENTIFICATION
8	25	1	1016128-011	BAND IDENTIFICATION
	26	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2 BLACK (ES2732 NO. 18)
	27	1	6900044-006	WIRE ND1002181, TYPE 2, CLASS 4, WHT. JKT. 24AWG WHT/RED, WHT/BLU 344FT. TOTAL LENGTH
8	28	130	1897300-003	CONTACT, ELECTRICAL, SPRING SOCKET
8	29		1897190- 1	CONTACT PIN
8	30		1897190- 2	CONTACT SOCKET
8	31	47	1016369-288	CONTACT OUTER MALE
8	32	49	1016369-388	CONTACT INNER FEMALE

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR G	SHEET 7 OF 72

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	33	108	1016369-588	HYRING
8	34	48	1016369-712	SLEEVE INNER
8	35	106	1016369-713	SLEEVE OUTER
8	36	1	1016369-721	CONTACT FEMALE
8	37	3	1016369-421	CONTACT FEMALE
8	38	32	1016369-420	CONTACT MALE
8	39	8	1016369-720	CONTACT MALE
8	40	60	1016369-188	CONTACT INNER MALE
8	41	59	1016369-488	CONTACT OUTER FEMALE
8	42	4	1010933-105	STRAIN RELIEF CLAMP
8	43	1	1010933-104	STRAIN RELIEF CLAMP
	44	1	6900044-007	WIRE ND1002181 TYPE 3, CLASS 4 WHT JKT 24AWG, WHT/RED, WHT/BLU, WHT/YEL, 11FT. TOTAL LENGTH
	45	1	6900044-008	WIRE ND1002181 TYPE 1, CLASS 4, WHT JKT 24AWG, WHT, 43FT. TOTAL LENGTH
	46	AR	SN60WS	SOLDER QQ-S-571(ES2175-1)
	47	AR	MIL-F-14256 TYPE A OR W	FLUX(ES2798)
	48	AR	SN60WRAP	SOLDER QQ-S-571(ES2175-3)
8	49	12	1010763- 1	SOLDER SLEEVE

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 8 OF 72

SEE NOTE

LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	50		1010958-001	DELETED
8	51	57	1016369-711	SLEEVE INNER
8	52	1	1897215-012	CONNECTOR, PLUG ELEC.
	53	1	6900044-009	WIRE ND1002181 TYPE 2, CLASS 4, WHT JKT 16AWG WHT/RED WHT/BLU 6FT. TOTAL LENGTH
8	54	2	1016006-004	SPLICE REDUCER
8	55	2	1010490-284	INSULATION SLEEVING
8	56	6	1897331-001	ADAPTER, CABLE CLAMP
8	57	6	1897330-001	CLAMP, CABLE
8	58	22	1010490-232	INSULATION SLEEVING
8	59	2	1010490-226	INSULATION SLEEVING
8	60	189	1897300-002	CONTACT, ELECTRICAL, SPRING SOCKET
8	61	25	1897300-001	CONTACT, ELECTRICAL, SPRING SOCKET
8	62	335	1015864-232	INSULATION, SLEEVING

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR G	SHEET 9 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTES 9, 22
A	1A	17		SHLD A1 P3-340	12				.25 .18	NO NO		60	
A	1B	14		P4-2/0 SHLD A1	2				.23 .25	NO NO		31, 33	
A	1L			P3-240 P4-3/0	12 2			.32	.18 .23	NO NO		28 31	
A	1R			P3-140 P4-3/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	2	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	2A	17		SHLD A2 P3-640	12				.25 .18	NO NO		60	
A	2B	14		P4-2/I SHLD A2	2				.21 .25	NO NO		32, 34, 35	
A	2L			P3-540 P4-1/0	12 2			.32	.18 .23	NO NO		28 31	
A	2R			P3-440 P4-1/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	3	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	3A	17		SHLD A3 P3-341	12				.25 .18	NO NO		60	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 10 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3B	14		P4-11/0 SHLD A3	2				.23 .25	NO NO		31, 33	
A 3L			P3-241 P4-12/0	12 2			.32	.18 .23	NO NO		28 31	
A 3R			P3-141 P4-12/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 4	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 4A	17		SHLD A4 P3-641	12				.25 .18	NO NO		60	
A 4B	14		P4-11/I SHLD A4	2				.21 .25	NO NO		32, 34, 35	
A 4L			P3-541 P4-10/0	12 2			.32	.18 .23	NO NO		28 31	
A 4R			P3-441 P4-10/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 5	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 5A	17		SHLD A5 P3-342	12				.25 .18	NO NO		60	
A 5B	14		P4-5/0 SHLD A5	2				.23 .25	NO NO		31, 33	
A 5L			P3-242 P4-6/0	12 2			.32	.18 .21	NO NO		28 31	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 11 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 5R			P3-142 P4-6/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 6	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 6A	17		SHLD A6 P3-642	12				.25 .18	NO NO		60	
A 6B	14		P4-5/I SHLD A6	2				.21 .25	NO NO		32, 34, 35	
A 6L			P3-542 P4-4/0	12 2			.32	.18 .23	NO NO		28 31	
A 6R			P3-442 P4-4/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 7	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 7A	17		SHLD A7 P3-343	12				.25 .18	NO NO		60	
A 7B	14		P4-14/0 SHLD A7	2				.23 .25	NO NO		31, 33	
A 7L			P3-243 P4-15/0	12 2			.32	.18 .23	NO NO		28 31	
A 7R			P3-143 P4-15/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 8	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 12 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 8A	17		SHLD A8 P3-643	12				.25 .18	NO NO		60	
A 8B	14		P4-14/I SHLD A8	2				.21 .25	NO NO		32, 34, 35	
A 8L			P3-543 P4-13/0	12 2			.32	.18 .23	NO NO		28 31	
A 8R			P3-443 P4-13/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 9	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 9A	17		SHLD A9 P3-344	12				.25 .18	NO NO		60	
A 9B	14		P4-8/0 SHLD A9	2				.23 .25	NO NO		31, 33	
A 9L			P3-244 P4-9/0	12 2			.32	.18 .23	NO NO		28 31	
A 9R			P3-144 P4-9/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 10	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 10A	17		SHLD A10 P3-644	12				.25 .18	NO NO		60	
A 10B	14		P4-8/I SHLD A10	2				.21 .25	NO NO		32, 34, 35	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 13 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 10L			P3-544 P4-7/0	12 2			.32	.18 .23	NO NO		28 31	
A 10R			P3-444 P4-7/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 11	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 11A	17		SHLD A11 P3-345	12				.25 .18	NO NO		60	
A 11B	14		P4-17/0 SHLD A11	2				.23 .25	NO NO		31, 33	
A 11L			P3-245 P4-18/0	12 2			.32	.18 .23	NO NO		28 31	
A 11R			P3-145 P4-18/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 12	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 12A	17		SHLD A12 P3-645	12				.25 .18	NO NO		60	
A 12B	14		P4-17/I SHLD A12	2				.21 .25	NO NO		32, 34, 35	
A 12L			P3-545 P4-16/0	12 2			.32	.18 .23	NO NO		28 31	
A 12R			P3-445 P4-16/I	12 2				.18 .21	NO NO		28 32, 34, 35	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 14 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 13A	17		SHLD A13 P3-346	12				.25 .18	NO NO		61	SEE NOTE 20
A 13B	17		P5-15 SHLD A13	4				.15 .25	NO NO		30	
A 13L			P3-246 P5-14	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 13R			P3-146 P5-13	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 14	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 14A	17		SHLD A14 P3-646	12				.25 .18	NO NO		61	SEE NOTE 20
A 14B	17		P5-18 SHLD .A14	4				.15 .25	NO NO		30	
A 14L			P3-546 P5-17	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 14R			P3-446 P5-16	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 15	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 15A	17		SHLD A15 P3-347	12				.25 .18	NO NO		61	SEE NOTE 20

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15B	17		P5-3 SHLD A15	4				.15 .25	NO NO		30	
A 15L			P3-247 P5-2	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 15R			P3-147 P5-1	12 4				.18 .15	NO NO		61 30	
A 16	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 16A	17		SHLD A16 P3-647	12				.25 .18	NO NO		61	SEE NOTE 20
A 16B	17		P5-6 SHLD A16	4				.15 .25	NO NO		30	
A 16L			P3-547 P5-5	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 16R			P3-447 P5-4	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 17	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 17A	17		SHLD A17 P3-348	12				.25 .18	NO NO		61	SEE NOTE 20
A 17B	17		P5-21 SHLD A17	4				.15 .25	NO NO		30	
A 17L			P3-248 P5-20	12 4				.18 .15	NO NO		61 30	SEE NOTE 20

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17R			P3-148 P5-19	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 18	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 18A	17		SHLD A18 P3-648	12				.25 .18	NO NO		61	SEE NOTE 20
A 18B	17		P5-24 SHLD A18	4				.15 .25	NO NO		30	
A 18L			P3-548 P5-23	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 18R			P3-448 P5-22	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 19	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 19A	17		SHLD A19 P3-349	12				.25 .18	NO NO		61	SEE NOTE 20
A 19B	17		P5-9 SHLD A19	4				.15 .25	NO NO		30	
A 19L			P3-249 P5-8	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 19R			P3-149 P5-7	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 20	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 20L			P2-K11 P3-528	15 12				.18 .18	NO NO		60 60	
A 20R			P2-H11 P3-428	15 12				.18 .18	NO NO		60 60	
A 21	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	
A 21L			P2-K10 P3-328	15 12				.18 .18	NO NO		60 60	
A 21R			P2-H10 P3-228	15 12				.18 .18	NO NO		60 60	
A 22	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 22A	17		SHLD A22 P2-B33	15				.25 .18	NO NO		60	
A 22B	17		P3-329 SHLD A22	12				.18 .25	NO NO		60	
A 22L			P2-B34 P3-229	15 12				.18 .18	NO NO		60 60	
A 22R			P2-B35 P3-129	15 12				.18 .18	NO NO		60 60	
A 23	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 23A	17		SHLD A23 P2-D33	15				.25 .18	NO NO		60	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23B	17		P3-629 SHLD A23	12				.18 .25	NO NO		60	
A 23L			P2-D34 P3-529	15 12				.18 .18	NO NO		60 60	
A 23R			P2-D35 P3-429	15 12				.18 .18	NO NO		60 60	
A 24	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 24A	17		SHLD A24 P2-G33	15				.25 .18	NO NO		60	
A 24B	17		P3-330 SHLD A24	12				.18 .25	NO NO		60	
A 24L			P2-G34 P3-230	15 12				.18 .18	NO NO		60 60	
A 24R			P2-G35 P3-130	15 12				.18 .18	NO NO		60 60	
A 25	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 25A	17		SHLD A25 P2-C33	15				.25 .18	NO NO		60	
A 25B	17		P3-630 SHLD A25	12				.18 .25	NO NO		60	
A 25L			P2-C34 P3-530	15 12				.18 .18	NO NO		60 60	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE REV LTR F SHEET 19 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P2-C35 P3-430	15 12				.18 .18	NO NO		60 60	
A 26	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 26A	17		SHLD A26 P2-F33	15				.25 .18	NO NO		60	
A 26B	17		P3-331 SHLD A26	12				.18 .25	NO NO		60	
A 26L			P2-F34 P3-231	15 12				.18 .18	NO NO		60 60	
A 26R			P2-F35 P3-131	15 12				.18 .18	NO NO		60 60	
A 27	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 27A	17		SHLD A27 P2-H33	15				.25 .18	NO NO		60	
A 27B	17		P3-631 SHLD A27	12				.18 .25	NO NO		60	
A 27L			P2-H34 P3-531	15 12				.18 .18	NO NO		60 60	
A 27R			P2-H35 P3-431	15 12				.18 .18	NO NO		28 28	
A 28	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE REV LTR F SHEET 20 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 28A	17		SHLD A28 E4	22				.25 .38	NO NO			
A 28B	17		P5-33 SHLD A28	4				.15 .25	NO NO		30	
A 28L			P3-232 P5-32	12 4				.18 .15	NO NO		60 30	
A 28R			P3-132 P5-31	12 4				.18 .15	NO NO		60 30	
A 29	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 29A	17		SHLD A29 E4	22				.25 .38	NO NO			
A 29B	17		P5-30 SHLD A29	4				.15 .25	NO NO		30	
A 29L			P3-532 P5-29	12 4				.18 .15	NO NO		60 30	
A 29R			P3-432 P5-28	12 4				.18 .15	NO NO		60 30	
A 31	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 31A	17		SHLD A31 E4	22				.25 .38	NO NO			
A 31B	17		P5-36 SHLD A31	4				.15 .25	NO NO		30	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE REV LTR F SHEET 21 OF 72

CABLE ASSEMBLY W133

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31L			P3-533 P5-35	12 4				.18 .15	NO NO		60 30	
A 31R			P3-433 P5-34	12 4				.18 .15	NO NO		60 30	
A 32	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 32A	17		SHLD A32 E4	22				.25 .38	NO NO			
A 32B	17		P5-39 SHLD A32	4				.15 .25	NO NO		30	
A 32L			P3-234 P5-38	12 4				.18 .15	NO NO		60 30	
A 32R			P3-134 P5-37	12 4				.18 .15	NO NO		60 30	
A 33	17		P2-H8 P3-136	15 12				.18 .18	NO NO		60 60	
A 34	17		P2-K8 P3-336	15 12				.18 .18	NO NO		60 60	
A 35	14		P3-113 P9-37/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 36	14		P3-612 P9-37/O	12 6				.18 .23	NO NO		28 41, 33	
A 37	17		P3-512 P9-38	12 6				.18 .21	NO NO		60 37	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE REV LTR G SHEET 22 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 38	14		P3-412 P9-36/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 39	14		P3-312 P9-36/0	12 6				.18 .23	NO NO		28 41, 33	
A 40	17		P3-112 P9-52	12 6				.18 .21	NO NO		60 37	
A 41	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 41A	17		SHLD A41 P3-111	12				.25 .18	NO NO		60	
A 41B	17		P9-32 SHLD A41	6				.21 .25	NO NO		37	
A 41L			P3-211 P9-31/0	12 6			.22	.18 .23	NO NO		28 41	
A 41R			P3-311 P9-31/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 42	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 42A	17		SHLD A42 P3-410	12				.25 .18	NO NO		60	
A 42B	14		P9-2/I SHLD A42	6				.21 .25	NO NO		40, 51, 35	
A 42L			P3-510 P9-1/0	12 6			.22	.18 .23	NO NO		28 41	

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 23 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 42R			P3-610 P9-1/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 43	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 43A	17		SHLD A43 P3-110	12				.25 .18	NO NO		60	
A 43B	14		P9-2/0 SHLD A43	6				.23 .25	NO NO		41, 33	
A 43L			P3-210 P9-3/0	12 6			.22	.18 .23	NO NO		28 41	
A 43R			P3-310 P9-3/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 44	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 44A	17		SHLD A44 P3-409	12				.25 .18	NO NO		60	
A 44B	14		P9-5/I SHLD A44	6				.21 .25	NO NO		40, 51, 35	
A 44L			P3-509 P9-4/0	12 6			.22	.18 .23	NO NO		28 41	
A 44R			P3-609 P9-4/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 45	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 24 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45A	17		SHLD A45 P3-109	12				.25 .18	NO NO		60	
A 45B	14		P9-5/0 SHLD A45	6				.23 .25	NO NO		41, 33	
A 45L			P3-209 P9-6/0	12 6			.22	.18 .23	NO NO		28 41	
A 45R			P3-309 P9-6/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 46	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 46A	17		SHLD A46 P3-408	12				.25 .18	NO NO		60	
A 46B	14		P9-8/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A 46L			P3-508 P9-7/0	12 6			.22	.18 .23	NO NO		28 41	
A 46R			P3-608 P9-7/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 47	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 47A	17		SHLD A47 P3-108	12				.25 .18	NO NO		60	
A 47B	14		P9-8/0 SHLD A47	6				.23 .25	NO NO		41, 33	

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SCALE-NONE | REV LTR F | SHEET 25 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47L			P3-208 P9-9/0	12 6			.22	.18 .23	NO NO		28 41	
A 47R			P3-308 P9-9/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 48	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 48A	17		SHLD A48 P3-407	12				.25 .18	NO NO		60	
A 48B	14		P9-11/I SHLD A48	6				.21 .25	NO NO		40, 51, 35	
A 48L			P3-507 P9-10/0	12 6			.22	.18 .23	NO NO		28 41	
A 48R			P3-607 P9-10/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 49	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 49A	17		SHLD A49 P3-107	12				.25 .18	NO NO		60	
A 49B	14		P9-11/0 SHLD A49	6				.23 .25	NO NO		41, 33	
A 49L			P3-207 P9-12/0	12 6			.22	.18 .23	NO NO		28 41	
A 49R			P3-307 P9-12/I	12 6				.18 .21	NO NO		28 40, 51, 35	

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SCALE-NONE | REV LTR F | SHEET 26 OF 72

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	50	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	50A	17		SHLD A50 P3-406	12				.25 .18	NO NO		60	
A	50B	14		P9-14/I SHLD A50	6				.21 .25	NO NO		40, 51, 35	
A	50L			P3-506 P9-13/0	12 6			.22	.18 .23	NO NO		28 41	
A	50R			P3-606 P9-13/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	51	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	51A	17		SHLD A51 P3-106	12				.25 .18	NO NO		60	
A	51B	14		P9-14/0 SHLD A51	6				.23 .25	NO NO		41, 33	
A	51L			P3-206 P9-15/0	12 6			.22	.18 .23	NO NO		28 41	
A	51R			P3-306 P9-15/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	52	14		P3-213 P9-39/0	12 6				.18 .23	NO NO		28 41, 33	
A	53	14		P3-313 P9-39/I	12 6				.18 .21	NO NO		28 40, 51, 35	

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	54	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	54A	17		SHLD A54 P3-405	12				.25 .18	NO NO		60	
A	54B	14		P9-17/I SHLD A54	6				.21 .25	NO NO		40, 51, 35	
A	54L			P3-505 P9-16/0	12 6			.22	.18 .23	NO NO		28 41	
A	54R			P3-605 P9-16/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	55	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	55A	17		SHLD A55 P3-105	12				.25 .18	NO NO		28	
A	55B	14		P9-17/0 SHLD A55	6				.23 .25	NO NO		41, 33	
A	55L			P3-205 P9-18/0	12 6			.22	.18 .23	NO NO		28 41	
A	55R			P3-305 P9-18/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	56	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	56A	17		SHLD A56 P3-404	12				.25 .18	NO NO		60	

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT. FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	56B	14		P9-20/I SHLD A56	6				.21 .25	NO NO		40, 51, 35	
A	56L			P3-504 P9-19/0	12 6			.22	.18 .23	NO NO		28 41	
A	56R			P3-604 P9-19/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	57	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	57A	17		SHLD A57 P3-104	12				.25 .18	NO NO		60	
A	57B	14		P9-20/0 SHLD A57	6				.23 .25	NO NO		41, 33	
A	57L			P3-204 P9-21/0	12 6			.22	.18 .23	NO NO		28 41	
A	57R			P3-304 P9-21/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	58	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	58A	17		SHLD A58 P3-403	12				.25 .18	NO NO		60	
A	58B	14		P9-23/I SHLD A58	6				.21 .25	NO NO		40, 51, 35	
A	58L			P3-503 P9-22/0	12 6			.22	.18 .23	NO NO		28 41	

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	58R			P3-603 P9-22/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	59	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	59A	17		SHLD A59 P3-103	12				.25 .18	NO NO		60	
A	59B	14		P9-23/0 SHLD A59	6				.23 .25	NO NO		41, 33	
A	59L			P3-203 P9-24/0	12 6			.22	.18 .23	NO NO		28 41	
A	59R			P3-303 P9-24/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	60	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	60A	17		SHLD A60 P3-402	12				.25 .18	NO NO		60	
A	60B	14		P9-26/I SHLD A60	6				.21 .25	NO NO		40, 51, 35	
A	60L			P3-502 P9-25/0	12 6			.22	.18 .23	NO NO		28 41	
A	60R			P3-602 P9-25/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	61	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61A	17		SHLD A61 P3-102	 12				.25 .18	NO NO		 60	
A 61B	14		P9-26/0 SHLD A61	6				.23 .25	NO NO		41, 33	
A 61L			P3-202 P9-27/0	12 6			 .22	.18 .23	NO NO		28 41	
A 61R			P3-302 P9-27/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 62	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 62A	17		SHLD A62 P3-401	 12				.25 .18	NO NO		 60	
A 62B	14		P9-29/I SHLD A62	6				.21 .25	NO NO		40, 51, 35	
A 62L			P3-501 P9-28/0	12 6			 .22	.18 .23	NO NO		28 41	
A 62R			P3-601 P9-28/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 63	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 63A	17		SHLD A63 P3-101	 12				.25 .18	NO NO		 60	
A 63B	14		P9-29/0 SHLD A63	6				.23 .25	NO NO		41, 33	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63L			P3-201 P9-30/0	12 6			 .22	.18 .23	NO NO		28 41	
A 63R			P3-301 P9-30/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 64	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 64A	17		SHLD A64 P3-649	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 64B	17		P5-12 SHLD A64	4				.15 .25	NO NO		30	
A 64L			P3-549 P5-11	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 64R			P3-449 P5-10	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 65	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 65A	17		SHLD A65 E4	 22				.25 .38	NO NO			
A 65B	17		P6-18 SHLD A65	5				.15 .25	NO NO		29	
A 65L			P3-215 P6-36	12 5				.18 .15	NO NO		60 29	
A 65R			P3-115 P6-19	12 5				.18 .15	NO NO		60 29	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 66	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 66A	17		SHLD A66 E4	 22				.25 .38	NO NO			
A 66B	17		P6-15 SHLD A66	5				.15 .25	NO NO		29	
A 66L			P3-415 P6-31	12 5				.18 .15	NO NO		60 29	
A 66R			P3-315 P6-30	12 5				.18 .15	NO NO		60 29	
A 67	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 67A	17		SHLD A67 E4	 22				.25 .38	NO NO			
A 67B	17		P6-1 SHLD A67	5				.15 .25	NO NO		29	
A 67L			P3-615 P6-5	12 5				.18 .15	NO NO		60 29	
A 67R			P3-515 P6-4	12 5				.18 .15	NO NO		60 29	
A 68	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 68A	17		SHLD A68 E4	 22				.25 .38	NO NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 68B	17		P6-26 SHLD A68	5				.15 .25	NO NO		29	
A 68L			P3-216 P6-11	12 5				.18 .15	NO NO		60 29	
A 68R			P3-116 P6-25	12 5				.18 .15	NO NO		60 29	
A 69	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 69A	17		SHLD A69 E4	 22				.25 .38	NO NO			
A 69B	17		P6-16 SHLD A69	5				.15 .25	NO NO		29	
A 69L			P3-416 P6-33	12 5				.18 .15	NO NO		60 29	
A 69R			P3-316 P6-17	12 5				.18 .15	NO NO		60 29	
A 70	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 70A	17		SHLD A70 E4	 22				.25 .38	NO NO			
A 70B	17		P6-13 SHLD A70	5				.15 .25	NO NO		29	
A 70L			P3-616 P6-28	12 5				.18 .15	NO NO		60 29	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 70R			P3-516 P6-27	12 5				.18 .15	NO NO		60 29	
A 71	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 71A	17		SHLD A71 E4	 22				.25 .38	NO NO			
A 71B	17		P6-9 SHLD A71	5				.15 .25	NO NO		29	
A 71L			P3-217 P6-23	12 5				.18 .15	NO NO		60 29	
A 71R			P3-117 P6-22	12 5				.18 .15	NO NO		28 29	
A 72	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 72A	17		SHLD A72 P7-17	 8				.25 .15	NO NO		 30	
A 72B	17		P13-17 SHLD A72	1				.15 .25	NO NO		30	
A 72L			P7-33 P13-33	8 1				.15 .15	NO NO		30 30	
A 72R			P7-16 P13-16	8 1				.15 .15	NO NO		30 30	
A 73	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73A	17		SHLD A73 P7-9	 8				.25 .15	NO NO		 30	
A 73B	17		P13-9 SHLD A73	1				.15 .25	NO NO		30	
A 73L			P7-21 P13-21	8 1				.15 .15	NO NO		30 30	
A 73R			P7-22 P13-22	8 1				.15 .15	NO NO		30 30	
A 74	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 74A	17		SHLD A74 P7-24	 8				.25 .15	NO NO		 30	
A 74B	17		P13-24 SHLD A74	1				.15 .25	NO NO		30	
A 74L			P7-23 P13-23	8 1				.15 .15	NO NO		30 30	
A 74R			P7-10 P13-10	8 1				.15 .15	NO NO		30 30	
A 75	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 75A	17		SHLD A75 P7-26	 8				.25 .15	NO NO		 30	
A 75B	17		P13-26 SHLD A75	1				.15 .25	NO NO		30	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75L			P7-25 P13-25	8 1				.15 .15	NO NO		30 30	
A 75R			P7-11 P13-11	8 1				.15 .15	NO NO		30 30	
A 76	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 76A	17		SHLD A76 P7-13	 8				.25 .15	NO NO		 30	
A 76B	17		P13-13 SHLD A76	1				.15 .25	NO NO		30	
A 76L			P7-27 P13-27	8 1				.15 .15	NO NO		30 30	
A 76R			P7-12 P13-12	8 1				.15 .15	NO NO		30 30	
A 77	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 77A	17		SHLD A77 P7-30	 8				.25 .15	NO NO		 30	
A 77B	17		P13-30 SHLD A77	1				.15 .25	NO NO		30	
A 77L			P7-29 P13-29	8 1				.15 .15	NO NO		30 30	
A 77R			P7-14 P13-14	8 1				.15 .15	NO NO		30 30	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 78	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	
A 78A	17		SHLD A78 P7-32	 8				.25 .15	NO NO		 30	
A 78B	17		P13-32 SHLD A78	1				.15 .25	NO NO		30	
A 78L			P7-31 P13-31	8 1				.15 .15	NO NO		30 30	
A 78R			P7-15 P13-15	8 1				.15 .15	NO NO		30 30	
A 79	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 79A	14		SHLD A79 P8-25/I	 7				.25 .21	NO NO		 32, 34, 35	
A 79B	17		P13-38 SHLD A79	1				.15 .25	NO NO		30	
A 79L			P8-24/0 P13-62	7 1			.32	.23 .15	NO NO		31 30	
A 79R			P8-24/I P13-63	7 1				.21 .15	NO NO		32, 34, 35 30	
A 80	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 80L			P11-30 P13-56	9 1				.15 .15	NO NO		29 30	

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	80R			P11-29 P13-81	9 1				.15 .15	NO NO		29 30	
A	81	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	81L			P11-2 P13-1	9 1				.15 .15	NO NO		29 30	
A	81R			P11-1 P13-2	9 1				.15 .15	NO NO		29 30	
A	82	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	82L			P11-4 P13-4	9 1				.15 .15	NO NO		29 30	
A	82R			P11-3 P13-3	9 1				.15 .15	NO NO		29 30	
A	83	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	83L			P11-6 P13-6	9 1				.15 .15	NO NO		29 30	
A	83R			P11-5 P13-5	9 1				.15 .15	NO NO		29 30	
A	84	15				2.80 2.80	2.50 2.50				A,6B A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A	84A	17		SHLD A84 P7-36	 8				.25 .15	NO NO		 30	

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	84B	17		P13-36 SHLD A84	1				.15 .25	NO NO		30	
A	84L			P7-35 P13-35	8 1				.15 .15	NO NO		30 30	
A	84R			P7-18 P13-18	8 1				.15 .15	NO NO		30 30	
A	85	15				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A	85A	17		SHLD A85 P7-20	 8				.25 .15	NO NO		 30	
A	85B	17		P13-20 SHLD A85	1				.15 .25	NO NO		30	
A	85L			P7-37 P13-37	8 1				.15 .15	NO NO		30 30	
A	85R			P7-19 P13-19	8 1				.15 .15	NO NO		30 30	
A	86	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	86L			P11-38 P13-61	9 1				.15 .15	NO NO		29 30	
A	86R			P11-37 P13-85	9 1				.15 .15	NO NO		29 30	
A	87	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 40 OF 72

M 2084 9-65

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	87L			P11-40 P13-59	9 1				.15 .15	NO NO		29 30	
A	87R			P11-39 P13-84	9 1				.15 .15	NO NO		29 30	
A	88	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A	88L			P11-42 P13-58	9 1				.15 .15	NO NO		29 30	
A	88R			P11-41 P13-82	9 1				.15 .15	NO NO		29 30	
A	89	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A	89A	14		SHLD A89 P8-11/I	 7				.25 .21	NO NO		 32, 34, 35	
A	89B	17		P13-42 SHLD A89	1				.15 .25	NO NO		30	
A	89L			P8-10/0 P13-66	7 1			.32	.23 .15	NO NO		31 30	
A	89R			P8-10/I P13-41	7 1				.21 .15	NO NO		32, 34, 35 30	
A	90	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A	90A	14		SHLD A90 P8-8/0	 7				.25 .23	NO NO		 31, 33	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 41 OF 72

MIL 2084 9-65

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	90B	17		P13-71 SHLD A90	1				.15 .25	NO NO		30	
A	90L			P8-9/0 P13-70	7 1			.32	.23 .15	NO NO		31 30	
A	90R			P8-9/I P13-46	7 1				.21 .15	NO NO		32, 34, 35 30	
A	91	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A	91A	14		SHLD A91 P8-8/I	 7				.25 .21	NO NO		 32, 34, 35	
A	91B	17		P13-47 SHLD A91	1				.15 .25	NO NO		30	
A	91L			P8-7/0 P13-48	7 1			.32	.23 .15	NO NO		31 30	
A	91R			P8-7/I P13-72	7 1				.21 .15	NO NO		32, 34, 35 30	
A	92	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A	92A	14		SHLD A92 P8-5/0	 7				.25 .23	NO NO		 31, 33	
A	92B	17		P13-80 SHLD A92	1				.15 .25	NO NO		30	
A	92L			P8-6/0 P13-79	7 1			.32	.23 .15	NO NO		31 30	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 42 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 92R			P8-6/I P13-55	7 1				.21 .15	NO NO		32, 34, 35 30	
A 93	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 93A	14		SHLD A93 P8-5/I	 7				.25 .21	NO NO		 32, 34, 35	
A 93B	17		P13-40 SHLD A93	1				.15 .25	NO NO		30	
A 93L			P8-4/0 P13-65	7 1			.32	.23 .15	NO NO		31 30	
A 93R			P8-4/I P13-64	7 1				.21 .15	NO NO		32, 34, 35 30	
A 94	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 94A	14		SHLD A94 P8-2/0	 7				.25 .23	NO NO		 31, 33	
A 94B	17		P13-52 SHLD A94	1				.15 .25	NO NO		30	
A 94L			P8-3/0 P13-76	7 1			.32	.23 .15	NO NO		31 30	
A 94R			P8-3/I P13-77	7 1				.21 .15	NO NO		32, 34, 35 30	
A 95	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 43 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95A	14		SHLD A95 P8-2/I	 7				.25 .21	NO NO		 32, 34, 35	
A 95B	17		P13-54 SHLD A95	1				.15 .25	NO NO		30	
A 95L			P8-1/0 P13-78	7 1			.32	.23 .15	NO NO		31 30	
A 95R			P8-1/I P13-53	7 1				.21 .15	NO NO		32, 34, 35 30	
A 96	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 96A	14		SHLD A96 P8-11/0	 7				.25 .23	NO NO		 31, 33	
A 96B	17		P13-68 SHLD A96	1				.15 .25	NO NO		30	
A 96L			P8-12/0 P13-67	7 1			.32	.23 .15	NO NO		31 30	
A 96R			P8-12/I P13-43	7 1				.21 .15	NO NO		32, 34, 35 30	
A 97	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 97A	17		SHLD A97 P8-14	 7				.25 .18	NO NO		 38	
A 97B	17		P13-45 SHLD A97	1				.15 .25	NO NO		30	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 44 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97L			P8-13/0 P13-69	7 1			.32	.23 .15	NO NO		31 30	
A 97R			P8-13/I P13-44	7 1				.21 .15	NO NO		32, 34, 35 30	
A 98	14		P2-G19 P8-42/I	15 7				.18 .21	NO NO		28 32, 33	
A 99	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 99L			P2-A25 P4-23/0	15 2			 .32	.18 .23	NO NO		28 31, 33	
A 99R			P2-A24 P4-23/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20, 33	
A 100L			P2-K30 P4-26/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100R			P2-K31 P4-26/0	15 2			 .32	.18 .23	NO NO		28 31	
A 102	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 102L			P2-K7 P1-30	15 3				.18 .18	NO NO		60 38	
A 102R			P2-K6 P1-29	15 3				.18 .18	NO NO		60 38	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 45 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 103L			P2-D7 P1-23	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 103R			P2-D6 P1-22	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 104	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 104L			P2-C7 P1-19	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 104R			P2-C6 P1-18	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 105	17		P2-F8 P1-24	15 3				.18 .18	NO NO		60 38	
A 107	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 107L			E11 P1-28	14 3				.38 .18	NO NO		 38	 SEE NOTE 20
A 107R			E13 P1-27	16 3				.38 .18	NO NO		 38	 SEE NOTE 20
A 108	16				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 108L			P2-G12 P1-33	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR G	SHEET 46 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 108R			P2-D12 P1-32	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 108Y			P2-F12 P1-34	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 109	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 109L			P2-B14 P1-38	15 3				.18 .18	NO NO		60 38	
A 109R			P2-A14 P1-37	15 3				.18 .18	NO NO		60 38	
A 110	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 110L			P2-K13 P1-42	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 110R			P2-H13 P1-41	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 112	15				2.30 5.30	2.00 5.00				B,7 B,7	20 20	
A 112L			P11-35 P2-K14	9 15				.15 .18	NO NO		29 60	
A 112R			P11-34 P2-H14	9 15				.15 .18	NO NO		29 60	
A 114	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 114A	17		SHLD A114 E1	 21				.25 .25	NO NO			
A 114W			P12-2/I P3-620	18 12				.21 .18	NO NO		35, 40, 51 28	
A 115	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	
A 115A	17		SHLD A115 E1	 21				.25 .25	NO NO			
A 115W			P12-9/I P3-121	18 12				.21 .18	NO NO		35, 40, 51 28	
A 116	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 116A	17		SHLD A116 E1	 21				.25 .25	NO NO			
A 116W			P12-3/I P3-221	18 12				.21 .18	NO NO		35, 40, 51 28	
A 117	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 117A	17		SHLD A117 E1	 21				.25 .25	NO NO			
A 117W			P12-10/I P3-321	18 12				.21 .18	NO NO		35, 40, 51 28	
A 118	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 118A	17		SHLD A118 E1	 21				.25 .25	NO NO			
A 118W			P12-3/0 P3-421	18 12			.22	.23 .18	NO NO		41 28	
A 119	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 119A	17		SHLD A119 E1	 21					NO NO			
A 119W			P12-10/0 P3-521	18 12			.22	.23 .18	NO NO		41 28	
A 120	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 120A	17		SHLD A120 E2	 19				.25 .25	NO NO			
A 120W			P12-1/0 P3-621	18 12				.23 .18	NO NO		41 28	
A 121	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 121A	17		SHLD A121 E2	 19				.25 .25	NO NO			
A 121W			P12-11/I P3-122	18 12				.21 .18	NO NO		35, 40, 51 28	
A 122	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 122A	17		SHLD A122 E2	 19				.25 .25	NO NO			
A 122W			P12-1/I P3-222	18 12				.21 .18	NO NO		35, 40, 51 28	
A 123	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 58 58	SEE NOTE 9
A 123A	17		SHLD A123 E2	 19				.25 .25	NO NO			
A 123W			P12-11/0 P3-322	18 12				.23 .18	NO NO		41 28	
A 124	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 124L			P2-B26 P4-19/0	15 2			 .32	.18 .23	NO NO		28 31	
A 124R			P2-A26 P4-19/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 125	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 125L			P2-B28 P4-20/0	15 2			 .32	.18 .23	NO NO		28 31	
A 125R			P2-A28 P4-20/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 126	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126L			P2-B30 P4-21/0	15 2			 .32	.18 .23	NO NO		28 31	
A 126R			P2-A30 P4-21/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 127	15				2.80 5.30	2.50 5.00				B,7 B,7	20 20	
A 127L			P11-32 P2-B15	9 15				.15 .18	NO NO		29 60	
A 127R			P11-31 P2-A15	9 15				.15 .18	NO NO		29 60	
A 128	15				5.30 2.80	5.00 2.50				B,7 B,7	20 20	
A 128L			P2-A21 P3-338	15 12				.18 .18	NO NO		60 60	
A 128R			P2-B21 P3-238	15 12				.18 .18	NO NO		60 60	
A 129	17		P2-B17 P3-138	15 12				.18 .18	NO NO		60 60	
A 130	27				5.30 2.80	5.00 2.50				B,7 B,7	20 20, 33	
A 130L			P2-K28 P4-25/0	15 2			 .32	.18 .23	NO NO		28 31	
A 130R			P2-K29 P4-25/I	15 2				.18 .21	NO NO		28 32, 34, 35	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 51 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 131	15				5.30 2.80	5.00 2.50				B,7 B,7	20 20	
A 131L			P2-G5 E11	15 14				.18 .38	NO NO		60	
A 131R			P2-G4 E10	15 13				.18 .38	NO NO		60	
A 132			DELETED									
A 132L			DELETED									
A 132R			DELETED									
A 134	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 134A	17		SHLD A134 P2-G23	 15				.25 .18	NO NO		 28	
A 134B	14		P8-25/0 SHLD A134	7				.23 .25	NO NO		31, 33	
A 134L			P2-K23 P8-26/0	15 7			 .32	.18 .23	NO NO		28 31	
A 134R			P2-H23 P8-26/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 135	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 52 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 135A	17		SHLD A135 P2-G24	 15				.25 .18	NO NO		 60	
A 135B	14		P8-16/I SHLD A135	7				.21 .25	NO NO		32, 34, 35	
A 135L			P2-K24 P8-15/0	15 7			 .32	.18 .23	NO NO		28 31	
A 135R			P2-H24 P8-15/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 136	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 136A	17		SHLD A136 P2-G25	 15				.25 .18	NO NO		 60	
A 136B	14		P8-16/0 SHLD A136	7				.23 .25	NO NO		31, 33	
A 136L			P2-K25 P8-17/0	15 7			 .32	.18 .23	NO NO		28 31	
A 136R			P2-H25 P8-17/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 137	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 137A	17		SHLD A137 P2-G21	 15				.25 .18	NO NO		 60	
A 137B	14		P8-19/I SHLD A137	7				.21 .25	NO NO		32, 34, 35	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 53 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 137L			P2-K21 P8-18/0	15 7			 .32	.18 .23	NO NO		28 31	
A 137R			P2-H21 P8-18/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 139	27				5.30 2.80	5.00 2.50				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 139A	17		SHLD A139 P2-G22	 15				.25 .18	NO NO		 60	
A 139B	14		P8-19/0 SHLD A139	7				.23 .25	NO NO		31, 33	
A 139L			P2-K22 P8-20/0	15 7			 .32	.18 .23	NO NO		28 31	
A 139R			P2-H22 P8-20/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 141	14		P12-4/I P2-F9	18 15				.21 .18	NO NO		40, 51, 35 28	
A 142	15				2.80 5.30	2.50 5.00				B,7 B,7	20 20	
A 142L			P11-12 P2-D1	9 15				.15 .18	NO NO		29 60	
A 142R			P11-11 P2-D2	9 15				.15 .18	NO NO		29 60	
A 144	27				3.30 5.30	3.00 5.00				A,6A B,7	33, 19, 20 20	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 54 OF 72

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 144A	17		SHLD A144 E2	19				.25 .25	NO NO			
A 144L			P12-16/0 P2-G28	18 15			.22	.23 .18	NO NO		41 28	
A 144R			P12-16/I P2-G31	18 15				.21 .18	NO NO		35, 40, 51 28	
A 145	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 20 20	SEE NOTE 9
A 145A	17		SHLD A145 E2	19				.25 .25	NO NO			
A 145W			P12-15/0 P2-G30	18 15				.23 .18	NO NO		41 28	
A 147	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 147A	17		SHLD A147 E2	19				.25 .25	NO NO			
A 147W			P12-15/I P2-G29	18 15				.21 .18	NO NO		35, 40, 51 28	
A 154	27				2.80 2.80	2.50 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 154B	14		P3-347 SHLD A154	12				.18 .25	NO NO			SEE NOTE 20
A 154L			P14-34/0 P3-247	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR G | SHEET 55 OF 72

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154R			P14-34/I P3-147	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 155	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 155B	14		P3-647 SHLD A155	12				.18 .25	NO NO			SEE NOTE 20
A 155L			P14-35/0 P3-547	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 155R			P14-35/I P3-447	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 156	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 156B	14		P3-349 SHLD A156	12				.18 .25	NO NO			SEE NOTE 20
A 156L			P14-32/0 P3-249	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 156R			P14-32/I P3-149	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 157	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	SEE NOTE 9
A 157B	14		P3-649 SHLD A157	12				.18 .25	NO NO			SEE NOTE 20
A 157L			P14-33/0 P3-549	17 12			.22	.23 .18	NO NO		41	SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR G | SHEET 56 OF 72

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 157R			P14-33/I P3-449	17 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 158	14		P12-2/0 P3-119	18 12				.23 .16	NO NO		41, 33 28	
A 159	14		P12-9/0 P3-422	18 12				.23 .18	NO NO		41, 33 28	
A 164	27				2.80 2.80	2.50 2.50				B,7 B,7	20, 33 20	
A 164L			P12-31/0 P13-8	17 1			.22	.23 .15	NO NO		41 30	
A 164R			P12-31/I P13-7	17 1				.21 .15	NO NO		40, 51, 35 30	
A 165	27				2.80 5.30	2.50 5.00				B,7 B,7	20, 33 20	
A 165L			P12-46/0 P2-A23	18 15			.22	.23 .18	NO NO		41 28	
A 165R			P12-46/I P2-B23	18 15				.21 .18	NO NO		40, 51, 35 28	
A 171	44				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 171L			P12-4/0 E14-B	18 23			.22	.23 .25	NO NO		41, 33	
A 171R			P12-33/0 P2-G8	18 15			.22	.23 .18	NO NO		41, 33 61	SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR G | SHEET 57 OF 72

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 171Y			P12-33/I E15	18 23				.21 .38	NO NO		40, 51, 35	
A 178	15				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 178L			P11-14 P2-C1	9 15				.15 .18	NO NO		29 60	
A 178R			P11-13 P2-C2	9 15				.15 .18	NO NO		29 60	
A 284	14		P2-A22 P8-41	15 7				.18 .18	NO NO		28 38	
A 344	16				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 344L			P2-F14 P1-46	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 344R			P2-G14 P1-45	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 344Y			P2-D14 P1-44	15 3				.18 .18	NO NO		60 39	SEE NOTE 20
A 345	15				3.30 3.30	3.00 3.00				B,7 B,7	20 20	
A 345L			E11 P1-26	14 3				.38 .18	NO NO			SEE NOTE 20
A 345R			E13 P1-25	16 3				.38 .18	NO NO			SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR G | SHEET 58 OF 72

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 346	15				3.80 3.80	3.50 3.50				B,7 B,7	20 20	
A 346L			E11 P1-26	14 3				.38 .18	NO NO		38	
A 346R			E13 P1-25	16 3				.38 .18	NO NO		38	
A 347	15				3.80 3.80	3.50 3.50				B,7 B,7	20 20	
A 347L			E11 P1-28	14 3				.38 .18	NO NO			SEE NOTE 20
A 347R			E13 P1-27	16 3				.38 .18	NO NO			SEE NOTE 20
A 348	17		P2-A8 E13	15 16				.18 .38	NO NO		28	
A 348L			DELETED									
A 348R			DELETED									
A 349	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 349L			P2-G7 P1-19	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 349R			P2-G6 P1-18	15 3				.18 .18	NO NO		60	SEE NOTE 20

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	G	SHEET 59 OF 72

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CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 350	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 350L			P2-B7 P1-23	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 350R			P2-B6 P1-22	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 351	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 351L			P2-F7 P1-21	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A 351R			P2-F6 P1-20	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A 352	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 352L			P2-A7 P1-21	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 352R			P2-A6 P1-20	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 353	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 353L			P2-A5 E11	15 14				.18 .38	NO NO		60	
A 353R			P2-A4 E10	15 13				.18 .38	NO NO		60	

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	G	SHEET 60 OF 72

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6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 354	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 354L			P2-B5 E11	15 14				.18 .38	NO NO		60	
A 354R			P2-B4 E10	15 13				.18 .38	NO NO		28	
A 355	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 355L			P2-C5 E11	15 14				.18 .38	NO NO		60	
A 355R			P2-C4 E10	15 13				.18 .38	NO NO		60	
A 356	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 356L			P2-D5 E11	15 14				.18 .38	NO NO		60	
A 356R			P2-D4 E10	15 13				.18 .38	NO NO		60	
A 357	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 357L			P2-F5 E11	15 14				.18 .38	NO NO		60	
A 357R			P2-F4 E10	15 13				.18 .38	NO NO		60	

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 61 OF 72

MIL 2084 9-65

6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 358	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A 358A	17		SHLD A358 E4					.25 .38	NO NO			
A 358B	17		P5-42 SHLD A358	4				.15 .25	NO NO		30	
A 358L			P3-337 P5-41	12 4				.18 .15	NO NO		60 30	
A 358R			P3-237 P5-40	12 4				.18 .15	NO NO		60 30	
A 359	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A 359A	17		SHLD A359 E4					.25 .38	NO NO			
A 359B	17		P5-45 SHLD A359	4				.15 .25	NO NO		30	
A 359L			P3-537 P5-44	12 4				.18 .15	NO NO		60 30	
A 359R			P3-437 P5-43	12 4				.18 .15	NO NO		60 30	
A 360	14		P3-611 P9-33/0	12 6				.18 .23	NO NO		28 41, 33	
A 361	15				5.30 2.60	5.00 2.30				B,7 A,6B	20 19, 20	

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 62 OF 72

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6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 361B	17		P5-81 SHLD A361	4				.15 .25	NO NO		30	
A 361L			P2-K15 P5-83	15 4				.18 .15	NO NO		60 30	
A 361R			P2-H15 P5-82	15 4				.18 .15	NO NO		60 30	
A 365	14		P14-48/I P1-12	18 3				.21 .18	NO NO		40, 51, 35 38	
A 366	17		P3-236 E12	12 11				.18 .38	NO NO		60	
A 367	17		P3-436 E12	12 11				.18 .38	NO NO		60	
A 385	53				3.80 3.80	3.50 3.50				B,7 B,7	59 59	
A 385L			P10-B E11	10 14				.28 .38	YES NO			
A 385R			P10-A E10	10 13				.28 .38	YES NO			
A 387	18		P10-H E13	10 16				.28 .38	YES NO			
A 397	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 397L			P2-K12 P1-42	15 3				.18 .18	NO NO		60	SEE NOTE 20

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	F	SHEET 63 OF 72	

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6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 397R			P2-H12 P1-41	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 398L			P2-F11 P1-34	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398R			P2-D11 P1-32	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398Y			P2-G11 P1-33	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 399L			P2-F13 P1-46	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399R			P2-D13 P1-44	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399Y			P2-G13 P1-45	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 417	14		P14-48/O P1-13	18 3			.22	.23 .18	NO NO		41, 33 38	
A 420	14		P2-G20 P8-44/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 421	14		P2-H20 P8-44/O	15 7				.18 .23	NO NO		28 31, 33	

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	F	SHEET 64 OF 72	

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CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 424	17		P2-G18 P4-22	15 2				.18 .18	NO NO		60 36	
A 426	18		P10-M E12	10 11				.28 .38	YES NO			
A 442	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 442B	14		P3-646 SHLD A442	12				.18 .25	NO NO			SEE NOTE 20
A 442L			P12-24/O P3-546	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 442R			P12-24/I P3-446	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 443	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 443B	14		P3-348 SHLD A443	12				.18 .25	NO NO			SEE NOTE 20
A 443L			P12-25/O P3-248	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 443R			P12-25/I P3-148	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 444	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 444B	14		P3-648 SHLD A444	12				.18 .25	NO NO			SEE NOTE 20

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	G	SHEET 65 OF 72	

MIL 2084 9-65

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 444L			P12-26/O P3-548	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 444R			P12-26/I P3-448	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 445	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 445B	14		P3-346 SHLD A445	12				.18 .25	NO NO			SEE NOTE 20
A 445L			P12-23/O P3-246	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 445R			P12-23/I P3-146	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 446	18		P10-E E10	10 13				.28 .38	YES NO			
A 449	18		P10-G E11	10 14				.28 .38	YES NO			
A 450	18		P10-N E11	10 14				.28 .38	YES NO			
A 453	18		P10-U P10-C*	10 10				.28 .28	YES YES			
A 454	18		P10-F E13	10 16				.28 .38	YES NO			
A 455	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

SIZE A	CODE IDENT NO. 99974	6900044		
SCALE-NONE	REV LTR	G	SHEET 66 OF 72	

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CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 455A	17		SHLD A455 E4	 22				.25 .38	NO NO			
A 455B	17		P5-27 SHLD A455	4				.15 .25	NO NO		30	
A 455L			P3-233 P5-26	12 4				.18 .15	NO NO		28 30	
A 455R			P3-133 P5-25	12 4				.18 .15	NO NO		60 30	
A 456	15				5.30 2.60	5.00 2.30				B,7 B,7	20 20	
A 456L			P2-G16 P5-80	15 4				.18 .15	NO NO		60 30	
A 456R			P2-H16 P5-79	15 4				.18 .15	NO NO		60 30	
A 457	44				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 457L			E14-B P11-9	23 9				.25 .15	NO NO		 29	
A 457R			P2-G8 P11-7	15 9				.18 .15	NO NO		 29	SEE NOTE 20
A 457Y			E15 P11-8	23 9				.38 .15	NO NO		 29	
A 458	18		E1 E3	21 20				.25 .25	NO NO			

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SCALE-NONE | REV LTR G | SHEET 67 OF 72

6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 459	18		E2 E3	19 20				.25 .25	NO NO			
A 460	18		E3 P12-44	20 18				.25 .25	NO NO		 36	
A 461	17		P9-55 P3-438	6 12				.21 .18	NO NO		37 60	
A 462	17		E4	22				.38	NO			
A 463	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 463L			P11-66 E14-B	9 23				.15 .25	NO NO		29	
A 463R			P11-65 P2-A27	9 15				.15 .18	NO NO		29 60	
A 464	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 464L			P11-68 E14-B	9 23				.15 .25	NO NO		29	
A 464R			P11-67 P2-A29	9 15				.15 .18	NO NO		29 60	
A 465	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 465L			P11-70 E14-B	9 23				.15 .25	NO NO		29	

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 68 OF 72

6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 465R			P11-69 P2-A31	9 15				.15 .18	NO NO		29 60	
A 466	14		P2-H17 P8-42/O	15 7				.25 .23	NO NO		28 31, 34, 35	
A 467	17		P6-37 P6-38	5 5				.15 .15	NO NO		29 29	
A 468	14		P1-50/I P1-50/O	3 3				.21 .23	NO NO		31, 33 32, 34, 35	
A 469	14		P9-40/I P3-522	6 12				.21 .18	NO NO		40, 51, 35 28	
A 470	14		P9-40/O P3-622	6 12				.23 .18	NO NO		41, 33 28	
A 471	17		P2-K4 E13	15 16				.18 .38	NO NO		60	
A 472	17		P2-C8 P1-2	15 3				.18 .18	NO NO		60 38	
A 473	17		P2-B8 P1-55	15 3				.18 .18	NO NO		60 38	
A 474	27				3.30 5.30	3.00 5.00				B,7 B,7	20, 33 20	SEE NOTE 9
A 474L			P12-47/O P2-F2	18 15			.22	.23 .18	NO NO		41 28	
A 474R			P12-47/I P2-F1	18 15				.21 .18	NO NO		40, 51, 35 28	

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR F | SHEET 69 OF 72

CABLE ASSEMBLY W133 6900044 G

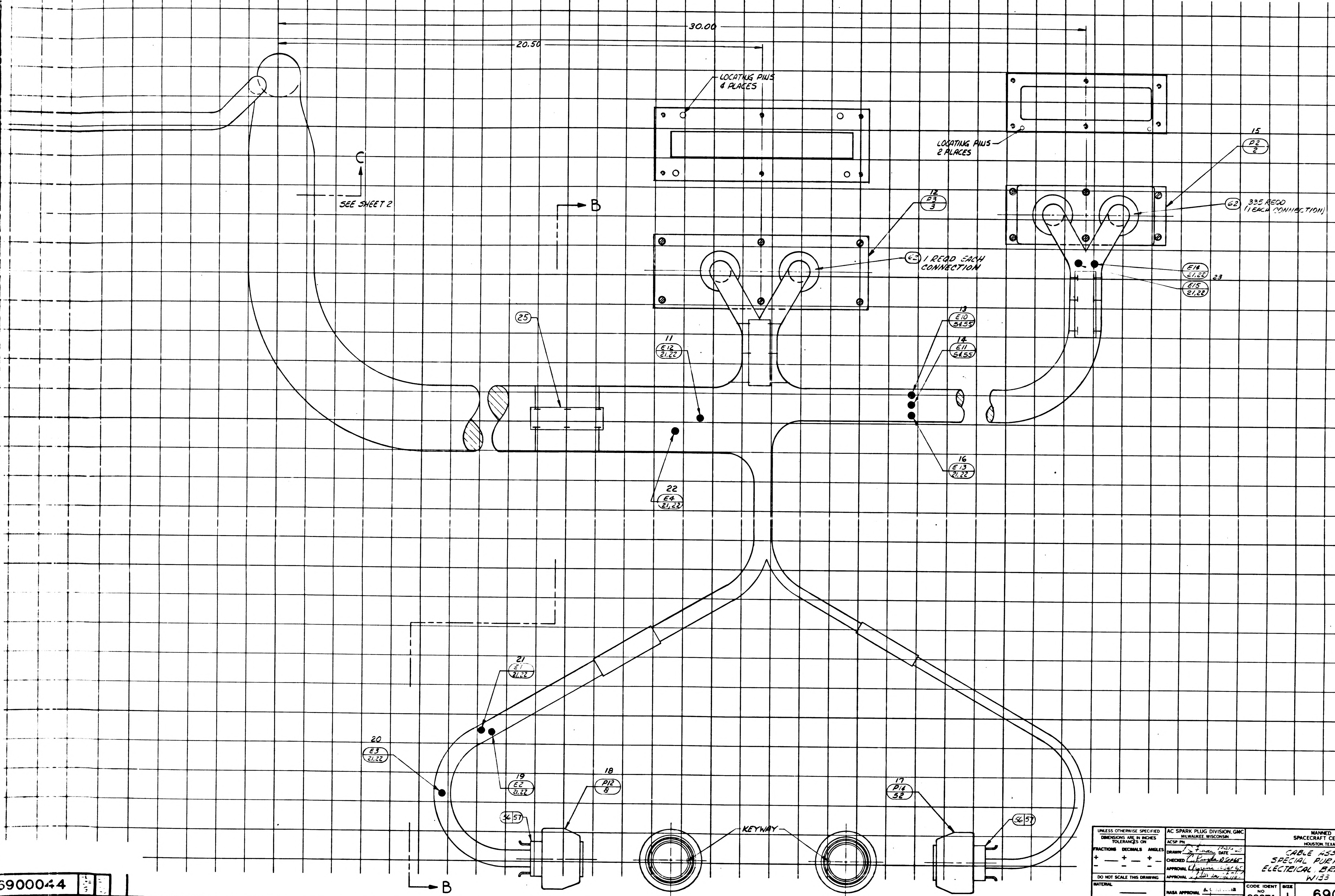
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 475	17		E14-B P2-G9	23 15				.25 .18	NO NO		 60	
A 476	17		P12-12/O P2-B27	18 15				.23 .18	NO NO		41, 33 60	
A 477	14		P12-12/I P2-B29	18 15				.21 .18	NO NO		51, 40, 35 60	
A 478	14		P12-14/I P2-B31	18 15				.21 .18	NO NO		51, 40, 35 60	
A 479	17		P12-14/O E14-B	18 23				.23 .25	NO NO		41, 33	
A 480	18		E13 E15	23 23				.38 .38	NO NO			
A 481	17		P2-H18 P4-54	15 2				.18 .21	NO NO		60 38	

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR G | SHEET 70 OF 72

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO		

SEE SHEET 1 FOR REVISION RECORD


30.00
20.50
LOCATING PINS 4 PLACES
LOCATING PINS 2 PLACES
C
SEE SHEET 2
B
15 P2 2
62 335 REQD (1 EACH CONNECTION)
12 P3 3
62 1 REQD EACH CONNECTION
E16 21,22
E15 21,22
23
25
11 E12 21,22
13 E10 54,55
14 E11 54,55
16 E13 21,22
22 E4 21,22
21 E1 21,22
20 E3 21,22
19 E2 21,22
18 P12 8
17 P14 52
56 57
KEYWAY
B

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 10 SEP 65
APPROVAL 10 SEP 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED
W133

CODE IDENT NO. 99974
SIZE J2
6900044
SCALE 1:1
SHEET [illegible] OF 7[illegible]

6900044

27/6900044

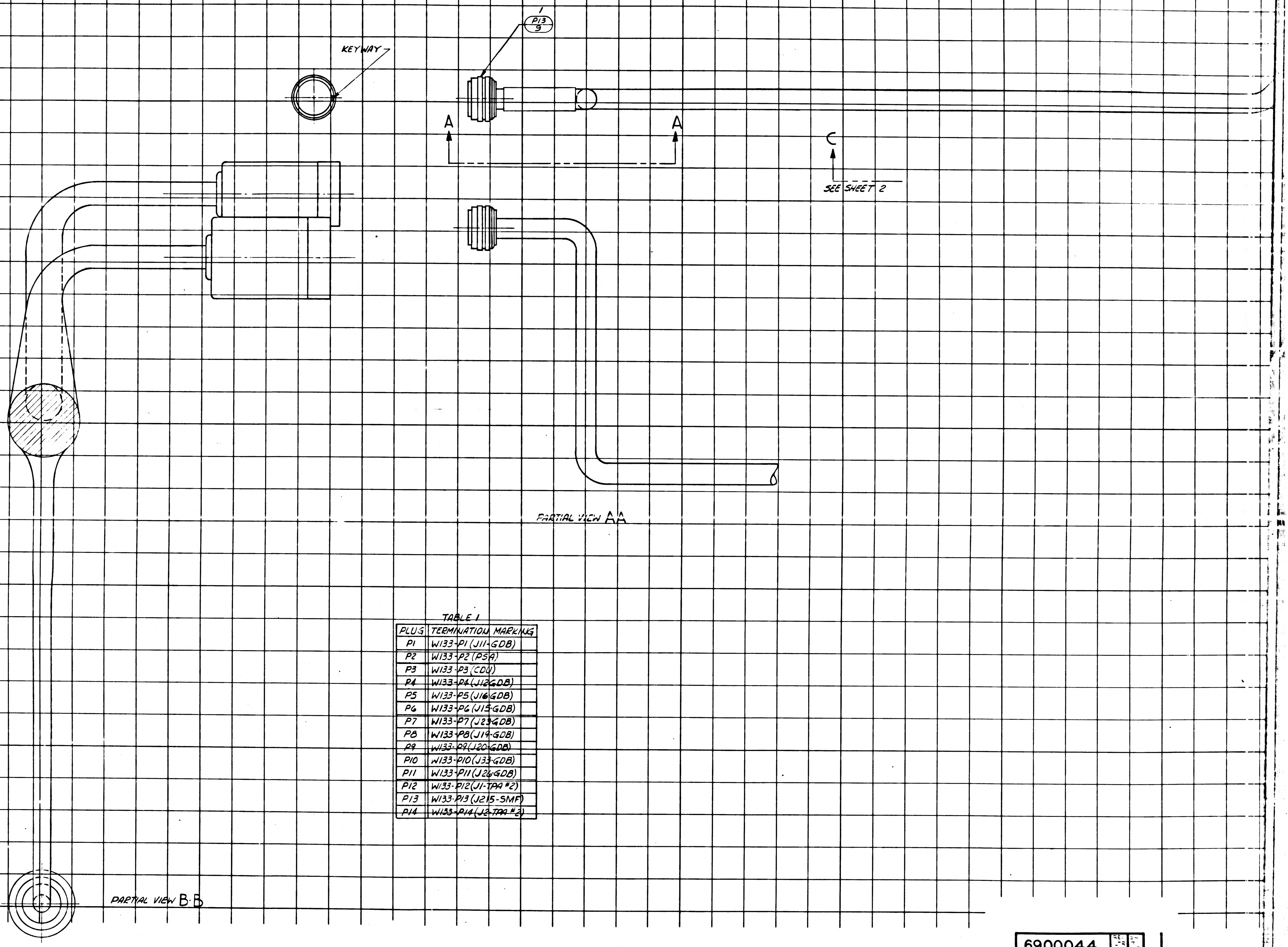

KEYWAY
1
P13
9
A
A
C
SEE SHEET 2
PARTIAL VIEW AA
PARTIAL VIEW B-B

TABLE I

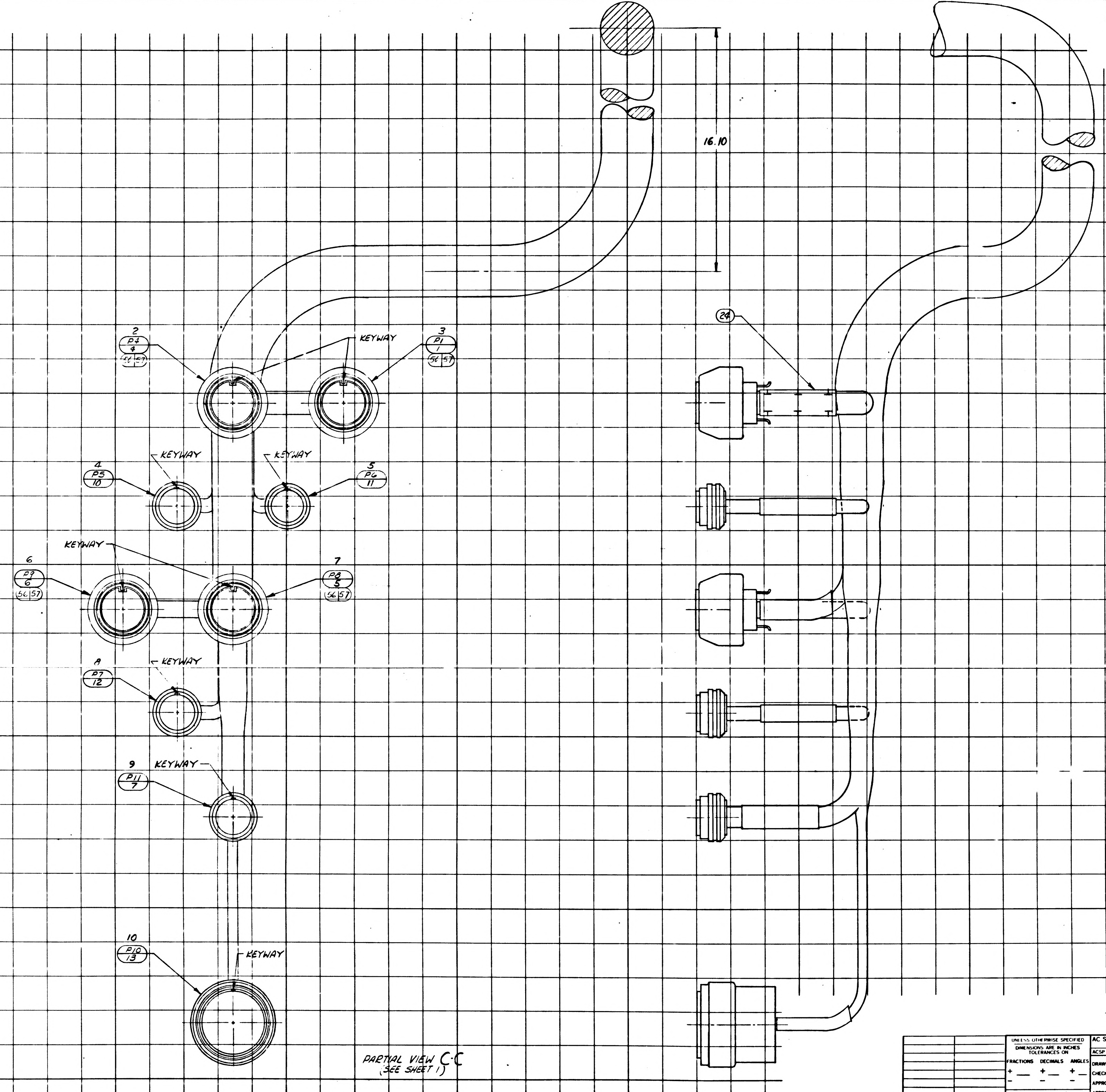
PLUG	TERMINATION MARKING
P1	W133-P1 (J11-GDB)
P2	W133-P2 (PSA)
P3	W133-P3 (CDU)
P4	W133-P4 (J12-GDB)
P5	W133-P5 (J16-GDB)
P6	W133-P6 (J15-GDB)
P7	W133-P7 (J23-GDB)
P8	W133-P8 (J19-GDB)
P9	W133-P9 (J20-GDB)
P10	W133-P10 (J33-GDB)
P11	W133-P11 (J26-GDB)
P12	W133-P12 (J1-TPA #2)
P13	W133-P13 (J215-SMF)
P14	W133-P14 (J2-TPA #2)

6900044

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO.		

SEE SHEET I FOR REVISION RECORD


16.10
24
2
P4
4
56 57
KEYWAY
3
P1
1
56 57
4
P5
10
KEYWAY
KEYWAY
5
P6
11
KEYWAY
6
P9
6
56 57
7
P8
5
56 57
8
P7
12
KEYWAY
9
KEYWAY
P11
7
10
P10
13
KEYWAY

PARTIAL VIEW C-C
(SEE SHEET 1)

6900044	1300030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 1 Aug 65
CHECKED C. Pyzda 10 SEP 65
APPROVAL 11 SEP 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE
ELECTRICAL BRANCHED
W 133

CODE IDENT NO 99974
SIZE E
6900044
SCALE 1:1
SHEET 72 OF 72

6900044 D

APPLICATION	
NEXT ASSY	USED ON
6900043-011	1900090

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACES REV(-) WITH CHANGE PER MXC 204908; WAS "C" SIZE WORD DRAWING	17SEP 65	PHG EF
B	REVISED PER MXC-206061	19 OCT. 65	JW EF
Ⓜ C	INITIAL RELEASE CLASS A PER TDRR 23807	20 OCT 65	RLP CW
D	REVISED PER TDRR 24142	24 NOV 65	LK MEM
Ⓜ E	REVISED PER TDRR 24173	29 NOV 65	RLP EF
Ⓜ F	REVISED PER TDRR 24858	26 DEC 65	JWF W.D.
Ⓐ G	REVISED PER TDRR 24880	8 JAN 66	cmc JJK
H	REVISED PER TDRR 24882	13 JAN 66	cmc JJK

REV	F	G	F	F	F	F	F	F	F	F	F	G	F	F	F	F	F	F	F	F	F	F	F	F	F	G
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS OF SHEETS REV							H	H	F	F	G	F	H	H	H	F	F	F	F	F	G	G	G	F	F	F
SHEET							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN A.J. FLUDER DATE 19AUG65
CHECKED C. PIOJDA 10SEP65
APPROVAL R. PIERINI 10SEP65
APPROVAL Uediman 10/26/65
NASA APPROVAL A. C. METZGER
MIT APPROVAL

CABLE ASSEMBLY
SPECIAL PURPOSE
BRANCHED ELECTRICAL
W133

CODE IDENT NO. 99974 SIZE A 6900044 REV H

CONTRACT NAS9-497 SCALE —— SHEET 1 OF 72

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	F														
48	F														
49	F														
50	F														
51	H														
52	F														
53	F														
54	H														
55	G														
56	G														
57	G														
58	H														
59	G														
60	G														
61	F														
62	F														
63	F														
64	F														
65	G														
66	G														
67	G														
68	F														
69	H														
70	G														
71	G														
72	D														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION H

NASA DRAWING NO. 6900044
SHEET 2 OF 72

NOTE GENERAL NOTES

NUMBER DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
  A - ND1002071
  B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 LACE HARNESS USING ITEM 26.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019.

6 APPLY LEAD IDENTIFICATIONS PER ND 1002019.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 POSITION IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
  A - FROM END SHIELD
  B - TO END SHIELD
  L - WHITE WITH BLUE TRACER
  R - WHITE WITH RED TRACER.
  W - WHITE
  Y - WHITE WITH YELLOW TRACER.

11 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 3 OF 72

NOTE GENERAL NOTES

NUMBER DESCRIPTION

12 ITEMS 50 (13) AND ITEM 29 (85) SUPPLIED WITH ITEM 7.
ITEMS 50 (13) AND ITEM 30 (85) SUPPLIED WITH ITEMS 9, 10 AND 12.
ITEM 50(9) AND ITEM 29 (61) SUPPLIED WITH ITEM 11.

13 SECURE TO CABLE USING ITEM 26, MARKING TO READ AWAY FROM CONNECTOR ALIGN CENTER LINE OF BAND AND OF ASSOCIATED CONNECTOR MASTER KEY SLOT TO BE COLINEAR WITHIN + OR -0.25 IN.

14 MARK IDENTIFICATION BANDS AS NOTED IN TABLE 1,.12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

15 FILL THE SPACE BETWEEN WIRE BUNDLE AND STRAIN RELIEF CLAMP USING ITEM 23 TO SECURE WIRE BUNDLE IN THE CLAMP.

16 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

17 DELETED

18 SOLDER PER MIL-S-6872 (ES2505-1) USING ITEM 48 OR ITEMS 46 AND 47.

19 SERIALIZE PER ND1002023.

20 LEADS USE COMMON ACCESSORY

21 IN CIRCUIT POINT FIELD
  I - INDICATES INNER LEAD
  O - INDICATES OUTER LEAD

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 4 OF 72

NOTE GENERAL NOTES

NUMBER DESCRIPTION

22 TYPICAL INSTALLATION OF CONTACTS AND ASSOCIATED HARDWARE---
  ASSEMBLE ITEM 33 OVER BOTH LEADS (I AND O). ASSEMBLE ITEM 35, ITEM 34 OR 51, AND ITEM 32 OR 40 TO INNER LEAD IN ORDER LISTED. CRIMP ITEM 32 OR 40. ASSEMBLE ITEM 31 OR 41 TO ITEM 32 OR 40. SLIDE ITEM 35 OVER ITEM 31 OR 41 UNTIL SEATED. LAYOUTER LEAD AGAINST ITEM 31 OR 41 IN OPEN SECTION OF ITEM 35. SLIDE ITEM 33 FORWARD AGAINST SPRING AND CRIMP.

23 DELETED

24 DELETED

25 ASSEMBLE PER ND1002032.

26 ON TO END OF LEAD A360, ADD ITEMS 40,31 AND 35. CRIMP A WIRE STUB (1 INCH MAX) OF 24AWG WIRE (ITEM 14) IN ITEM 40 TO PROPERLY ASSEMBLE CONTACT PER NOTE 22. GLYPTAL STUB END AFTER ASSEMBLY

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR G	SHEET 5 OF 72

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	1	1	1897215-004	CONNECTOR, PLUG ELEC.
	2	1	6900050-011	CONNECTOR, PLUG ELEC.
	3	1	2900714-011	CONNECTOR, PLUG ELEC.
8	4	1	1897215-005	CONNECTOR, PLUG ELEC.
8	5	1	1897215-003	CONNECTOR, PLUG ELEC.
8	6	1	1897215-013	CONNECTOR, PLUG ELEC.
8	7	1	1897250-001	CONNECTOR, PLUG ELEC.
8	8	1	1897215-011	CONNECTOR, PLUG ELEC.
8	9	1	1897249-204	CONNECTOR, PLUG ELEC.
8	10	1	1897249-001	CONNECTOR, PLUG ELEC.
8	11	1	1897250-006	CONNECTOR, PLUG ELEC.
8	12	1	1897249-004	CONNECTOR, PLUG ELEC.
8	13	1	1897232-231	CONNECTOR, PLUG ELEC.
	14	1	6900044-001	WIRE ND1002181 TYPE 1, CLASS 1, 24AWG, WHT. 100FT. TOTAL LENGTH
	15	1	6900044-002	WIRE ND1002181 TYPE 2, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU 411FT. TOTAL LENGTH
	16	1	6900044-003	WIRE ND1002181 TYPE 3, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU, WHT/YEL 24FT. TOTAL LENGTH

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 6 OF 72

SEE NOTE

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900044-004	WIRE ND1002181, TYPE 1, CLASS 1, 22AWG, WHT. 136FT. TOTAL LENGTH
	18	1	6900044-005	WIRE ND1002181 TYPE 1, CLASS 1, 16AWG, WHT 44FT TOTAL LENGTH
8	19	179	1010763- 2	SOLDER SLEEVE
8	20	292	1010490-228	INSULATION SLEEVING
8	21	8	1016006-002	SPLICE REDUCER
8	22	8	1010490-258	INSULATION SLEEVING
	23	AR	1901390	FILLER TAPE
8	24	14	1016128-041	BAND IDENTIFICATION
8	25	1	1016128-011	BAND IDENTIFICATION
	26	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2 BLACK (ES2732 NO. 18)
	27	1	6900044-006	WIRE ND1002181, TYPE 2, CLASS 4, WHT. JKT. 24AWG WHT/RED, WHT/BLU 344FT. TOTAL LENGTH
8	28	128	1897300-003	CONTACT, ELECTRICAL, SPRING SOCKET
8	29		1897190- 1	CONTACT PIN
8	30		1897190- 2	CONTACT SOCKET
8	31	47	1016369-288	CONTACT OUTER MALE
8	32	49	1016369-388	CONTACT INNER FEMALE

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	H	SHEET 7 OF 72

SEE NOTE

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	33	107	1016369-588	HYRING
8	34	48	1016369-712	SLEEVE INNER
8	35	105	1016369-713	SLEEVE OUTER
8	36	1	1016369-721	CONTACT FEMALE
8	37	3	1016369-421	CONTACT FEMALE
8	38	32	1016369-420	CONTACT MALE
8	39	8	1016369-720	CONTACT MALE
8	40	59	1016369-188	CONTACT INNER MALE
8	41	58	1016369-488	CONTACT OUTER FEMALE
8	42	4	1010933-105	STRAIN RELIEF CLAMP
8	43	1	1010933-104	STRAIN RELIEF CLAMP
	44	1	6900044-007	WIRE ND1002181 TYPE 3, CLASS 4 WHT JKT 24AWG, WHT/RED, WHT/BLU, WHT/YEL, 11FT. TOTAL LENGTH
	45	1	6900044-008	WIRE ND1002181 TYPE 1, CLASS 4, WHT JKT 24AWG, WHT, 43FT. TOTAL LENGTH
	46	AR	SN60WS	SOLDER QQ-S-571(ES2175-1)
	47	AR	MIL-F-14256 TYPE A OR W	FLUX(ES2798)
	48	AR	SN60WRAP	SOLDER QQ-S-571(ES2175-3)
8	49	12	1010763- 1	SOLDER SLEEVE

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	H	SHEET 8 OF 72

SEE NOTE

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	50		1010958-001	DELETED
8	51	56	1016369-711	SLEEVE INNER
8	52	1	1897215-012	CONNECTOR, PLUG ELEC.
	53	1	6900044-009	WIRE ND1002181 TYPE 2, CLASS 4, WHT JKT 16AWG WHT/RED WHT/BLU 6FT. TOTAL LENGTH
8	54	2	1016006-004	SPLICE REDUCER
8	55	2	1010490-284	INSULATION SLEEVING
8	56	6	1897331-001	ADAPTER, CABLE CLAMP
8	57	6	1897330-001	CLAMP, CABLE
8	58	22	1010490-232	INSULATION SLEEVING
8	59	2	1010490-226	INSULATION SLEEVING
8	60	185	1897300-002	CONTACT, ELECTRICAL, SPRING SOCKET
8	61	25	1897300-001	CONTACT, ELECTRICAL, SPRING SOCKET
8	62	335	1015864-232	INSULATION, SLEEVING

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	H	SHEET 9 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTES 9, 22
A	1A	17	SHLD A1 P3-340	 12				.25 .18	NO NO		 60	
A	1B	14	P4-2/0 SHLD A1	2				.23 .25	NO NO		31, 33	
A	1L		P3-240 P4-3/0	12 2			 .32	.18 .23	NO NO		28 31	
A	1R		P3-140 P4-3/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	2	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	2A	17	SHLD A2 P3-640	 12				.25 .18	NO NO		 60	
A	2B	14	P4-2/I SHLD A2	2				.21 .25	NO NO		32, 34, 35	
A	2L		P3-540 P4-1/0	12 2			 .32	.18 .23	NO NO		28 31	
A	2R		P3-440 P4-1/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	3	27			5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	3A	17	SHLD A3 P3-341	 12				.25 .18	NO NO		 60	

SIZE	CODE IDENT NO.		
A	99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 10 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	3B	14		P4-11/0 SHLD A3	2				.23 .25	NO NO		31, 33	
A	3L			P3-241 P4-12/0	12 2			.32	.18 .23	NO NO		28 31	
A	3R			P3-141 P4-12/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	4	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	4A	17		SHLD A4 P3-641	 12				.25 .18	NO NO		 60	
A	4B	14		P4-11/I SHLD A4	2				.21 .25	NO NO		32, 34, 35	
A	4L			P3-541 P4-10/0	12 2			.32	.18 .23	NO NO		28 31	
A	4R			P3-441 P4-10/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	5	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	5A	17		SHLD A5 P3-342	 12				.25 .18	NO NO		 60	
A	5B	14		P4-5/0 SHLD A5	2				.23 .25	NO NO		31, 33	
A	5L			P3-242 P4-6/0	12 2			.32	.18 .21	NO NO		28 31	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 11 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	5R			P3-142 P4-6/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	6	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	6A	17		SHLD A6 P3-642	 12				.25 .18	NO NO		 60	
A	6B	14		P4-5/I SHLD A6	2				.21 .25	NO NO		32, 34, 35	
A	6L			P3-542 P4-4/0	12 2			.32	.18 .23	NO NO		28 31	
A	6R			P3-442 P4-4/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	7	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	7A	17		SHLD A7 P3-343	 12				.25 .18	NO NO		 60	
A	7B	14		P4-14/0 SHLD A7	2				.23 .25	NO NO		31, 33	
A	7L			P3-243 P4-15/0	12 2			.32	.18 .23	NO NO		28 31	
A	7R			P3-143 P4-15/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	8	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 12 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	8A	17		SHLD A8 P3-643	 12				.25 .18	NO NO		 60	
A	8B	14		P4-14/I SHLD A8	2				.21 .25	NO NO		32, 34, 35	
A	8L			P3-543 P4-13/0	12 2			.32	.18 .23	NO NO		28 31	
A	8R			P3-443 P4-13/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	9	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	9A	17		SHLD A9 P3-344	 12				.25 .18	NO NO		 60	
A	9B	14		P4-8/0 SHLD A9	2				.23 .25	NO NO		31, 33	
A	9L			P3-244 P4-9/0	12 2			.32	.18 .23	NO NO		28 31	
A	9R			P3-144 P4-9/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	10	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	10A	17		SHLD A10 P3-644	 12				.25 .18	NO NO		 60	
A	10B	14		P4-8/I SHLD A10	2				.21 .25	NO NO		32, 34, 35	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 13 OF 72

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	10L			P3-544 P4-7/0	12 2			.32	.18 .23	NO NO		28 31	
A	10R			P3-444 P4-7/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	11	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	11A	17		SHLD A11 P3-345	 12				.25 .18	NO NO		 60	
A	11B	14		P4-17/0 SHLD A11	2				.23 .25	NO NO		31, 33	
A	11L			P3-245 P4-18/0	12 2			.32	.18 .23	NO NO		28 31	
A	11R			P3-145 P4-18/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A	12	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	12A	17		SHLD A12 P3-645	 12				.25 .18	NO NO		 60	
A	12B	14		P4-17/I SHLD A12	2				.21 .25	NO NO		32, 34, 35	
A	12L			P3-545 P4-16/0	12 2			.32	.18 .23	NO NO		28 31	
A	12R			P3-445 P4-16/I	12 2				.18 .21	NO NO		28 32, 34, 35	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 14 OF 72

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 13A	17		SHLD A13 P3-346	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 13B	17		P5-15 SHLD A13	4				.15 .25	NO NO		30	
A 13L			P3-246 P5-14	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 13R			P3-146 P5-13	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 14	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 14A	17		SHLD A14 P3-646	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 14B	17		P5-18 SHLD A14	4				.15 .25	NO NO		30	
A 14L			P3-546 P5-17	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 14R			P3-446 P5-16	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 15	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 15A	17		SHLD A15 P3-347	 12				.25 .18	NO NO		 61	 SEE NOTE 20

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR G	SHEET 15 OF 72

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CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15B	17		P5-3 SHLD A15	4				.15 .25	NO NO		30	
A 15L			P3-247 P5-2	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 15R			P3-147 P5-1	12 4				.18 .15	NO NO		61 30	
A 16	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 16A	17		SHLD A16 P3-647	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 16B	17		P5-6 SHLD A16	4				.15 .25	NO NO		30	
A 16L			P3-547 P5-5	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 16R			P3-447 P5-4	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 17	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 17A	17		SHLD A17 P3-348	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 17B	17		P5-21 SHLD A17	4				.15 .25	NO NO		30	
A 17L			P3-248 P5-20	12 4				.18 .15	NO NO		61 30	SEE NOTE 20

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR G	SHEET 16 OF 72

MIL 2084 9-65

CABLE ASSEMBLY W133 6900044 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17R			P3-148 P5-19	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 18	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 18A	17		SHLD A18 P3-648	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 18B	17		P5-24 SHLD A18	4				.15 .25	NO NO		30	
A 18L			P3-548 P5-23	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 18R			P3-448 P5-22	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 19	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 19A	17		SHLD A19 P3-349	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 19B	17		P5-9 SHLD A19	4				.15 .25	NO NO		30	
A 19L			P3-249 P5-8	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 19R			P3-149 P5-7	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 20	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	

SIZE	CODE IDENT NO.	
A	99974	6900044
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6900044 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 20L			P2-K11 P3-528	15 12				.18 .18	NO NO		60 60	
A 20R			P2-H11 P3-428	15 12				.18 .18	NO NO		60 60	
A 21	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	
A 21L			P2-K10 P3-328	15 12				.18 .18	NO NO		60 60	
A 21R			P2-H10 P3-228	15 12				.18 .18	NO NO		60 60	
A 22	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 22A	17		SHLD A22 P2-B33	 15				.25 .18	NO NO		 60	
A 22B	17		P3-329 SHLD A22	12				.18 .25	NO NO		60	
A 22L			P2-B34 P3-229	15 12				.18 .18	NO NO		60 60	
A 22R			P2-B35 P3-129	15 12				.18 .18	NO NO		60 60	
A 23	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 23A	17		SHLD A23 P2-D33	 15				.25 .18	NO NO		 60	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 18 OF 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23B	17		P3-629 SHLD A23	12 				.18 .25	NO NO		60 	
A 23L			P2-D34 P3-529	15 12				.18 .18	NO NO		60 60	
A 23R			P2-D35 P3-429	15 12				.18 .18	NO NO		60 60	
A 24	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 24A	17		SHLD A24 P2-G33	 15				.25 .18	NO NO		 60	
A 24B	17		P3-330 SHLD A24	12 				.18 .25	NO NO		60 	
A 24L			P2-G34 P3-230	15 12				.18 .18	NO NO		60 60	
A 24R			P2-G35 P3-130	15 12				.18 .18	NO NO		60 60	
A 25	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 25A	17		SHLD A25 P2-C33	 15				.25 .18	NO NO		 60	
A 25B	17		P3-630 SHLD A25	12 				.18 .25	NO NO		60 	
A 25L			P2-C34 P3-530	15 12				.18 .18	NO NO		60 60	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25R			P2-C35 P3-430	15 12				.18 .18	NO NO		60 60	
A 26	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 26A	17		SHLD A26 P2-F33	 15				.25 .18	NO NO		 60	
A 26B	17		P3-331 SHLD A26	12 				.18 .25	NO NO		60 	
A 26L			P2-F34 P3-231	15 12				.18 .18	NO NO		60 60	
A 26R			P2-F35 P3-131	15 12				.18 .18	NO NO		60 60	
A 27	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 27A	17		SHLD A27 P2-H33	 15				.25 .18	NO NO		 60	
A 27B	17		P3-631 SHLD A27	12 				.18 .25	NO NO		60 	
A 27L			P2-H34 P3-531	15 12				.18 .18	NO NO		60 60	
A 27R			P2-H35 P3-431	15 12				.18 .18	NO NO		28 28	
A 28	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 28A	17		SHLD A28 E4	 22				.25 .38	NO NO			
A 28B	17		P5-33 SHLD A28	4 				.15 .25	NO NO		30 	
A 28L			P3-232 P5-32	12 4				.18 .15	NO NO		60 30	
A 28R			P3-132 P5-31	12 4				.18 .15	NO NO		60 30	
A 29	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 29A	17		SHLD A29 E4	 22				.25 .38	NO NO			
A 29B	17		P5-30 SHLD A29	4 				.15 .25	NO NO		30 	
A 29L			P3-532 P5-29	12 4				.18 .15	NO NO		60 30	
A 29R			P3-432 P5-28	12 4				.18 .15	NO NO		60 30	
A 31	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 31A	17		SHLD A31 E4	 22				.25 .38	NO NO			
A 31B	17		P5-36 SHLD A31	4 				.15 .25	NO NO		30 	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31L			P3-533 P5-35	12 4				.18 .15	NO NO		60 30	
A 31R			P3-433 P5-34	12 4				.18 .15	NO NO		60 30	
A 32	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 32A	17		SHLD A32 E4	 22				.25 .38	NO NO			
A 32B	17		P5-39 SHLD A32	4 				.15 .25	NO NO		30 	
A 32L			P3-234 P5-38	12 4				.18 .15	NO NO		60 30	
A 32R			P3-134 P5-37	12 4				.18 .15	NO NO		60 30	
A 33	17		P2-H8 P3-136	15 12				.18 .18	NO NO		60 60	
A 34	17		P2-K8 P3-336	15 12				.18 .18	NO NO		60 60	
A 35	14		P3-113 P9-37/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 36	14		P3-612 P9-37/O	12 6				.18 .23	NO NO		28 41, 33	
A 37	17		P3-512 P9-38	12 6				.18 .21	NO NO		60 37	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 38	14		P3-412 P9-36/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 39	14		P3-312 P9-36/0	12 6				.18 .23	NO NO		28 41, 33	
A 40	17		P3-112 P9-52	12 6				.18 .21	NO NO		60 37	
A 41	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 41A	17		SHLD A41 P3-111	12				.25 .18	NO NO		60	
A 41B	17		P9-32 SHLD A41	6				.21 .25	NO NO		37	
A 41L			P3-211 P9-31/0	12 6			.22	.18 .23	NO NO		28 41	
A 41R			P3-311 P9-31/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 42	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 42A	17		SHLD A42 P3-410	12				.25 .18	NO NO		60	
A 42B	14		P9-2/I SHLD A42	6				.21 .25	NO NO		40, 51, 35	
A 42L			P3-510 P9-1/0	12 6			.22	.18 .23	NO NO		28 41	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 42R			P3-610 P9-1/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 43	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 43A	17		SHLD A43 P3-110	12				.25 .18	NO NO		60	
A 43B	14		P9-2/0 SHLD A43	6				.23 .25	NO NO		41, 33	
A 43L			P3-210 P9-3/0	12 6			.22	.18 .23	NO NO		28 41	
A 43R			P3-310 P9-3/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 44	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 44A	17		SHLD A44 P3-409	12				.25 .18	NO NO		60	
A 44B	14		P9-5/I SHLD A44	6				.21 .25	NO NO		40, 51, 35	
A 44L			P3-509 P9-4/0	12 6			.22	.18 .23	NO NO		28 41	
A 44R			P3-609 P9-4/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 45	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 45A	17		SHLD A45 P3-109	12				.25 .18	NO NO		60	
A 45B	14		P9-5/0 SHLD A45	6				.23 .25	NO NO		41, 33	
A 45L			P3-209 P9-6/0	12 6			.22	.18 .23	NO NO		28 41	
A 45R			P3-309 P9-6/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 46	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 46A	17		SHLD A46 P3-408	12				.25 .18	NO NO		60	
A 46B	14		P9-8/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A 46L			P3-508 P9-7/0	12 6			.22	.18 .23	NO NO		28 41	
A 46R			P3-608 P9-7/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 47	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 47A	17		SHLD A47 P3-108	12				.25 .18	NO NO		60	
A 47B	14		P9-8/0 SHLD A47	6				.23 .25	NO NO		41, 33	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47L			P3-208 P9-9/0	12 6			.22	.18 .23	NO NO		28 41	
A 47R			P3-308 P9-9/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 48	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 48A	17		SHLD A48 P3-407	12				.25 .18	NO NO		60	
A 48B	14		P9-11/I SHLD A48	6				.21 .25	NO NO		40, 51, 35	
A 48L			P3-507 P9-10/0	12 6			.22	.18 .23	NO NO		28 41	
A 48R			P3-607 P9-10/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 49	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 49A	17		SHLD A49 P3-107	12				.25 .18	NO NO		60	
A 49B	14		P9-11/0 SHLD A49	6				.23 .25	NO NO		41, 33	
A 49L			P3-207 P9-12/0	12 6			.22	.18 .23	NO NO		28 41	
A 49R			P3-307 P9-12/I	12 6				.18 .21	NO NO		28 40, 51, 35	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 50	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 50A	17		SHLD A50 P3-406	 12				.25 .18	NO NO		 60	
A 50B	14		P9-14/I SHLD A50	6				.21 .25	NO NO		40, 51, 35	
A 50L			P3-506 P9-13/0	12 6			 .22	.18 .23	NO NO		28 41	
A 50R			P3-606 P9-13/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 51	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 51A	17		SHLD A51 P3-106	 12				.25 .18	NO NO		 60	
A 51B	14		P9-14/0 SHLD A51	6				.23 .25	NO NO		41, 33	
A 51L			P3-206 P9-15/0	12 6			 .22	.18 .23	NO NO		28 41	
A 51R			P3-306 P9-15/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 52	14		P3-213 P9-39/0	12 6				.18 .23	NO NO		28 41, 33	
A 53	14		P3-313 P9-39/I	12 6				.18 .21	NO NO		28 40, 51, 35	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 54	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 54A	17		SHLD A54 P3-405	 12				.25 .18	NO NO		 60	
A 54B	14		P9-17/I SHLD A54	6				.21 .25	NO NO		40, 51, 35	
A 54L			P3-505 P9-16/0	12 6			 .22	.18 .23	NO NO		28 41	
A 54R			P3-605 P9-16/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 55	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 55A	17		SHLD A55 P3-105	 12				.25 .18	NO NO		 28	
A 55B	14		P9-17/0 SHLD A55	6				.23 .25	NO NO		41, 33	
A 55L			P3-205 P9-18/0	12 6			 .22	.18 .23	NO NO		28 41	
A 55R			P3-305 P9-18/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 56	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 56A	17		SHLD A56 P3-404	 12				.25 .18	NO NO		 60	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE REV LTR F SHEET 28 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 56B	14		P9-20/I SHLD A56	6				.21 .25	NO NO		40, 51, 35	
A 56L			P3-504 P9-19/0	12 6			 .22	.18 .23	NO NO		28 41	
A 56R			P3-604 P9-19/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 57	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 57A	17		SHLD A57 P3-104	 12				.25 .18	NO NO		 60	
A 57B	14		P9-20/0 SHLD A57	6				.23 .25	NO NO		41, 33	
A 57L			P3-204 P9-21/0	12 6			 .22	.18 .23	NO NO		28 41	
A 57R			P3-304 P9-21/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 58	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 58A	17		SHLD A58 P3-403	 12				.25 .18	NO NO		 60	
A 58B	14		P9-23/I SHLD A58	6				.21 .25	NO NO		40, 51, 35	
A 58L			P3-503 P9-22/0	12 6			 .22	.18 .23	NO NO		28 41	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE REV LTR F SHEET 29 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 58R			P3-603 P9-22/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 59	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 59A	17		SHLD A59 P3-103	 12				.25 .18	NO NO		 60	
A 59B	14		P9-23/0 SHLD A59	6				.23 .25	NO NO		41, 33	
A 59L			P3-203 P9-24/0	12 6			 .22	.18 .23	NO NO		28 41	
A 59R			P3-303 P9-24/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 60	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 60A	17		SHLD A60 P3-402	 12				.25 .18	NO NO		 60	
A 60B	14		P9-26/I SHLD A60	6				.21 .25	NO NO		40, 51, 35	
A 60L			P3-502 P9-25/0	12 6			 .22	.18 .23	NO NO		28 41	
A 60R			P3-602 P9-25/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 61	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE REV LTR F SHEET 30 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61A	17		SHLD A61 P3-102	 12				.25 .18	NO NO		 60	
A 61B	14		P9-26/0 SHLD A61	6				.23 .25	NO NO		41, 33	
A 61L			P3-202 P9-27/0	12 6			 .22	.18 .23	NO NO		28 41	
A 61R			P3-302 P9-27/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 62	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 62A	17		SHLD A62 P3-401	 12				.25 .18	NO NO		 60	
A 62B	14		P9-29/I SHLD A62	6				.21 .25	NO NO		40, 51, 35	
A 62L			P3-501 P9-28/0	12 6			 .22	.18 .23	NO NO		28 41	
A 62R			P3-601 P9-28/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 63	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 63A	17		SHLD A63 P3-101	 12				.25 .18	NO NO		 60	
A 63B	14		P9-29/0 SHLD A63	6				.23 .25	NO NO		41, 33	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 31 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63L			P3-201 P9-30/0	12 6			 .22	.18 .23	NO NO		28 41	
A 63R			P3-301 P9-30/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 64	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 64A	17		SHLD A64 P3-649	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 64B	17		P5-12 SHLD A64	4				.15 .25	NO NO		30	
A 64L			P3-549 P5-11	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 64R			P3-449 P5-10	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 65	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 65A	17		SHLD A65 E4	 22				.25 .38	NO NO			
A 65B	17		P6-18 SHLD A65	5				.15 .25	NO NO		29	
A 65L			P3-215 P6-36	12 5				.18 .15	NO NO		60 29	
A 65R			P3-115 P6-19	12 5				.18 .15	NO NO		60 29	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR G
SHEET 32 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 66	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 66A	17		SHLD A66 E4	 22				.25 .38	NO NO			
A 66B	17		P6-15 SHLD A66	5				.15 .25	NO NO		29	
A 66L			P3-415 P6-31	12 5				.18 .15	NO NO		60 29	
A 66R			P3-315 P6-30	12 5				.18 .15	NO NO		60 29	
A 67	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 67A	17		SHLD A67 E4	 22				.25 .38	NO NO			
A 67B	17		P6-1 SHLD A67	5				.15 .25	NO NO		29	
A 67L			P3-615 P6-5	12 5				.18 .15	NO NO		60 29	
A 67R			P3-515 P6-4	12 5				.18 .15	NO NO		60 29	
A 68	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 68A	17		SHLD A68 E4	 22				.25 .38	NO NO			

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 33 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 68B	17		P6-26 SHLD A68	5				.15 .25	NO NO		29	
A 68L			P3-216 P6-11	12 5				.18 .15	NO NO		60 29	
A 68R			P3-116 P6-25	12 5				.18 .15	NO NO		60 29	
A 69	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 69A	17		SHLD A69 E4	 22				.25 .38	NO NO			
A 69B	17		P6-16 SHLD A69	5				.15 .25	NO NO		29	
A 69L			P3-416 P6-33	12 5				.18 .15	NO NO		60 29	
A 69R			P3-316 P6-17	12 5				.18 .15	NO NO		60 29	
A 70	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 70A	17		SHLD A70 E4	 22				.25 .38	NO NO			
A 70B	17		P6-13 SHLD A70	5				.15 .25	NO NO		29	
A 70L			P3-616 P6-28	12 5				.18 .15	NO NO		60 29	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 34 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 70R			P3-516 P6-27	12 5				.18 .15	NO NO		60 29	
A 71	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 71A	17		SHLD A71 E4	 22				.25 .38	NO NO			
A 71B	17		P6-9 SHLD A71	5				.15 .25	NO NO		29	
A 71L			P3-217 P6-23	12 5				.18 .15	NO NO		60 29	
A 71R			P3-117 P6-22	12 5				.18 .15	NO NO		28 29	
A 72	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 72A	17		SHLD A72 P7-17	 8				.25 .15	NO NO		 30	
A 72B	17		P13-17 SHLD A72	1				.15 .25	NO NO		30	
A 72L			P7-33 P13-33	8 1				.15 .15	NO NO		30 30	
A 72R			P7-16 P13-16	8 1				.15 .15	NO NO		30 30	
A 73	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 35 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73A	17		SHLD A73 P7-9	 8				.25 .15	NO NO		 30	
A 73B	17		P13-9 SHLD A73	1				.15 .25	NO NO		30	
A 73L			P7-21 P13-21	8 1				.15 .15	NO NO		30 30	
A 73R			P7-22 P13-22	8 1				.15 .15	NO NO		30 30	
A 74	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 74A	17		SHLD A74 P7-24	 8				.25 .15	NO NO		 30	
A 74B	17		P13-24 SHLD A74	1				.15 .25	NO NO		30	
A 74L			P7-23 P13-23	8 1				.15 .15	NO NO		30 30	
A 74R			P7-10 P13-10	8 1				.15 .15	NO NO		30 30	
A 75	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 75A	17		SHLD A75 P7-26	 8				.25 .15	NO NO		 30	
A 75B	17		P13-26 SHLD A75	1				.15 .25	NO NO		30	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 36 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75L			P7-25 P13-25	8 1				.15 .15	NO NO		30 30	
A 75R			P7-11 P13-11	8 1				.15 .15	NO NO		30 30	
A 76	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 76A	17		SHLD A76 P7-13	 8				.25 .15	NO NO		 30	
A 76B	17		P13-13 SHLD A76	1				.15 .25	NO NO		30	
A 76L			P7-27 P13-27	8 1				.15 .15	NO NO		30 30	
A 76R			P7-12 P13-12	8 1				.15 .15	NO NO		30 30	
A 77	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 77A	17		SHLD A77 P7-30	 8				.25 .15	NO NO		 30	
A 77B	17		P13-30 SHLD A77	1				.15 .25	NO NO		30	
A 77L			P7-29 P13-29	8 1				.15 .15	NO NO		30 30	
A 77R			P7-14 P13-14	8 1				.15 .15	NO NO		30 30	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 37 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 78	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	
A 78A	17		SHLD A78 P7-32	 8				.25 .15	NO NO		 30	
A 78B	17		P13-32 SHLD A78	1				.15 .25	NO NO		30	
A 78L			P7-31 P13-31	8 1				.15 .15	NO NO		30 30	
A 78R			P7-15 P13-15	8 1				.15 .15	NO NO		30 30	
A 79	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 79A	14		SHLD A79 P8-25/I	 7				.25 .21	NO NO		 32, 34, 35	
A 79B	17		P13-38 SHLD A79	1				.15 .25	NO NO		30	
A 79L			P8-24/0 P13-62	7 1			.32	.23 .15	NO NO		31 30	
A 79R			P8-24/I P13-63	7 1				.21 .15	NO NO		32, 34, 35 30	
A 80	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 80L			P11-30 P13-56	9 1				.15 .15	NO NO		29 30	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 38 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 80R			P11-29 P13-81	9 1				.15 .15	NO NO		29 30	
A 81	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 81L			P11-2 P13-1	9 1				.15 .15	NO NO		29 30	
A 81R			P11-1 P13-2	9 1				.15 .15	NO NO		29 30	
A 82	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 82L			P11-4 P13-4	9 1				.15 .15	NO NO		29 30	
A 82R			P11-3 P13-3	9 1				.15 .15	NO NO		29 30	
A 83	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 83L			P11-6 P13-6	9 1				.15 .15	NO NO		29 30	
A 83R			P11-5 P13-5	9 1				.15 .15	NO NO		29 30	
A 84	15				2.80 2.80	2.50 2.50				A,6B A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 84A	17		SHLD A84 P7-36	 8				.25 .15	NO NO		 30	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 39 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 84B	17		P13-36 SHLD A84	1 				.15 .25	NO NO		30 	
A 84L			P7-35 P13-35	8 1				.15 .15	NO NO		30 30	
A 84R			P7-18 P13-18	8 1				.15 .15	NO NO		30 30	
A 85	15				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 85A	17		SHLD A85 P7-20	 8				.25 .15	NO NO		 30	
A 85B	17		P13-20 SHLD A85	1 				.15 .25	NO NO		30 	
A 85L			P7-37 P13-37	8 1				.15 .15	NO NO		30 30	
A 85R			P7-19 P13-19	8 1				.15 .15	NO NO		30 30	
A 86	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 86L			P11-38 P13-61	9 1				.15 .15	NO NO		29 30	
A 86R			P11-37 P13-85	9 1				.15 .15	NO NO		29 30	
A 87	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 40 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87L			P11-40 P13-59	9 1				.15 .15	NO NO		29 30	
A 87R			P11-39 P13-84	9 1				.15 .15	NO NO		29 30	
A 88	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 88L			P11-42 P13-58	9 1				.15 .15	NO NO		29 30	
A 88R			P11-41 P13-82	9 1				.15 .15	NO NO		29 30	
A 89	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 89A	14		SHLD A89 P8-11/I	 7				.25 .21	NO NO		 32, 34, 35	
A 89B	17		P13-42 SHLD A89	1 				.15 .25	NO NO		30 	
A 89L			P8-10/0 P13-66	7 1			.32 	.23 .15	NO NO		31 30	
A 89R			P8-10/I P13-41	7 1				.21 .15	NO NO		32, 34, 35 30	
A 90	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 90A	14		SHLD A90 P8-8/0	 7				.25 .23	NO NO		 31, 33	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 41 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 90B	17		P13-71 SHLD A90	1 				.15 .25	NO NO		30 	
A 90L			P8-9/0 P13-70	7 1			.32 	.23 .15	NO NO		31 30	
A 90R			P8-9/I P13-46	7 1				.21 .15	NO NO		32, 34, 35 30	
A 91	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 91A	14		SHLD A91 P8-8/I	 7				.25 .21	NO NO		 32, 34, 35	
A 91B	17		P13-47 SHLD A91	1 				.15 .25	NO NO		30 	
A 91L			P8-7/0 P13-48	7 1			.32 	.23 .15	NO NO		31 30	
A 91R			P8-7/I P13-72	7 1				.21 .15	NO NO		32, 34, 35 30	
A 92	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 92A	14		SHLD A92 P8-5/0	 7				.25 .23	NO NO		 31, 33	
A 92B	17		P13-80 SHLD A92	1 				.15 .25	NO NO		30 	
A 92L			P8-6/0 P13-79	7 1			.32 	.23 .15	NO NO		31 30	

SIZE A	CODE IDENT NO. 99974	6900044
SCALE-NONE	REV LTR F	SHEET 42 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 92R			P8-6/I P13-55	7 1				.21 .15	NO NO		32, 34, 35 30	
A 93	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 93A	14		SHLD A93 P8-5/I	 7				.25 .21	NO NO		 32, 34, 35	
A 93B	17		P13-40 SHLD A93	1				.15 .25	NO NO		30	
A 93L			P8-4/0 P13-65	7 1			.32	.23 .15	NO NO		31 30	
A 93R			P8-4/I P13-64	7 1				.21 .15	NO NO		32, 34, 35 30	
A 94	27				2.80 2.80	2.50 2.50				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 94A	14		SHLD A94 P8-2/0	 7				.25 .23	NO NO		 31, 33	
A 94B	17		P13-52 SHLD A94	1				.15 .25	NO NO		30	
A 94L			P8-3/0 P13-76	7 1			.32	.23 .15	NO NO		31 30	
A 94R			P8-3/I P13-77	7 1				.21 .15	NO NO		32, 34, 35 30	
A 95	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9

SIZE A | CODE IDENT NO. 99974 | 6900044
SCALE-NONE | REV LTR F | SHEET 43 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95A	14		SHLD A95 P8-2/I	 7				.25 .21	NO NO		 32, 34, 35	
A 95B	17		P13-54 SHLD A95	1				.15 .25	NO NO		30	
A 95L			P8-1/0 P13-78	7 1			.32	.23 .15	NO NO		31 30	
A 95R			P8-1/I P13-53	7 1				.21 .15	NO NO		32, 34, 35 30	
A 96	27				2.80 3.30	2.50 3.00				A,68 A,68	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 96A	14		SHLD A96 P8-11/0	 7				.25 .23	NO NO		 31, 33	
A 96B	17		P13-68 SHLD A96	1				.15 .25	NO NO		30	
A 96L			P8-12/0 P13-67	7 1			.32	.23 .15	NO NO		31 30	
A 96R			P8-12/I P13-43	7 1				.21 .15	NO NO		32, 34, 35 30	
A 97	27				2.80 3.30	2.50 3.00				A,68 A,68	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 97A	17		SHLD A97 P8-14	 7				.25 .18	NO NO		 38	
A 97B	17		P13-45 SHLD A97	1				.15 .25	NO NO		30	

SIZE A | CODE IDENT NO. 99974 | 6900044
SCALE-NONE | REV LTR F | SHEET 44 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97L			P8-13/0 P13-69	7 1			.32	.23 .15	NO NO		31 30	
A 97R			P8-13/I P13-44	7 1				.21 .15	NO NO		32, 34, 35 30	
A 98	14		P2-G19 P8-42/I	15 7				.18 .21	NO NO		28 32, 33	
A 99	27				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 99L			P2-A25 P4-23/0	15 2			 .32	.18 .23	NO NO		28 31, 33	
A 99R			P2-A24 P4-23/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100	27				5.30 2.30	5.00 2.00				B,7 8,7	20 20, 33	
A 100L			P2-K30 P4-26/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100R			P2-K31 P4-26/0	15 2			 .32	.18 .23	NO NO		28 31	
A 102	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 102L			P2-K7 P1-30	15 3				.18 .18	NO NO		60 38	
A 102R			P2-K6 P1-29	15 3				.18 .18	NO NO		60 38	

SIZE A | CODE IDENT NO. 99974 | 6900044
SCALE-NONE | REV LTR F | SHEET 45 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	15				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 103L			P2-D7 P1-23	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 103R			P2-D6 P1-22	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 104	15				5.30 2.30	5.00 2.00				B,7 8,7	20 20	
A 104L			P2-C7 P1-19	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 104R			P2-C6 P1-18	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 105	17		P2-F8 P1-24	15 3				.18 .18	NO NO		60 38	
A 107	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 107L			E11 P1-28	14 3				.38 .18	NO NO		 38	 SEE NOTE 20
A 107R			E13 P1-27	16 3				.38 .18	NO NO		 38	 SEE NOTE 20
A 108	16				5.30 2.30	5.00 2.00				B,7 B,7	20 20	
A 108L			P2-G12 P1-33	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044
SCALE-NONE | REV LTR G | SHEET 46 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 108R			P2-D12	15				.18	NO		60	
			P1-32	3				.18	NO		39	SEE NOTE 20
A 108Y			P2-F12	15				.18	NO		60	
			P1-34	3				.18	NO		39	SEE NOTE 20
A 109	15				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20	
A 109L			P2-B14	15				.18	NO		60	
			P1-38	3				.18	NO		38	
A 109R			P2-A14	15				.18	NO		60	
			P1-37	3				.18	NO		38	
A 110	15				5.30	5.00				B,7	20	
					2.30	2.00				B,7	20	
A 110L			P2-K13	15				.18	NO		60	
			P1-42	3				.18	NO		39	SEE NOTE 20
A 110R			P2-H13	15				.18	NO		60	
			P1-41	3				.18	NO		39	SEE NOTE 20
A 112	15				2.30	2.00				B,7	20	
					5.30	5.00				B,7	20	
A 112L			P11-35	9				.15	NO		29	
			P2-K14	15				.18	NO		60	
A 112R			P11-34	9				.15	NO		29	
			P2-H14	15				.18	NO		60	
A 114	45				3.30	3.00				A,6A	49, 58	
					5.30	5.00				B,7	58	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 114A	17		SHLD A114					.25	NO			
			E1	21				.25	NO			
A 114W			P12-2/I	18				.21	NO		35, 40, 51	
			P3-620	12				.18	NO		28	
A 115	45				3.30	3.00				A,6A	49, 58	
					5.30	5.00				B,7	58	
A 115A	17		SHLD A115					.25	NO			
			E1	21				.25	NO			
A 115W			P12-9/I	18				.21	NO		35, 40, 51	
			P3-121	12				.18	NO		28	
A 116	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	
A 116A	17		SHLD A116					.25	NO			
			E1	21				.25	NO			
A 116W			P12-3/I	18				.21	NO		35, 40, 51	
			P3-221	12				.18	NO		28	
A 117	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	
A 117A	17		SHLD A117					.25	NO			
			E1	21				.25	NO			
A 117W			P12-10/I	18				.21	NO		35, 40, 51	
			P3-321	12				.18	NO		28	
A 118	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 118A	17		SHLD A118					.25	NO			
			E1	21				.25	NO			
A 118W			P12-3/0	18			.22	.23	NO		41	
			P3-421	12				.18	NO		28	
A 119	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	
A 119A	17		SHLD A119						NO			
			E1	21					NO			
A 119W			P12-10/0	18			.22	.23	NO		41	
			P3-521	12				.18	NO		28	
A 120	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	
A 120A	17		SHLD A120					.25	NO			
			E2	19				.25	NO			
A 120W			P12-1/0	18				.23	NO		41	
			P3-621	12				.18	NO		28	
A 121	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	
A 121A	17		SHLD A121					.25	NO			
			E2	19				.25	NO			
A 121W			P12-11/I	18				.21	NO		35, 40, 51	
			P3-122	12				.18	NO		28	
A 122	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 122A	17		SHLD A122					.25	NO			
			E2	19				.25	NO			
A 122W			P12-1/I	18				.21	NO		35, 40, 51	
			P3-222	12				.18	NO		28	
A 123	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
					5.30	5.00				B,7	58	
A 123A	17		SHLD A123					.25	NO			
			E2	19				.25	NO			
A 123W			P12-11/0	18				.23	NO		41	
			P3-322	12				.18	NO		28	
A 124	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	
A 124L			P2-B26	15				.18	NO		28	
			P4-19/0	2			.32	.23	NO		31	
A 124R			P2-A26	15				.18	NO		28	
			P4-19/I	2				.21	NO		32, 34, 35	
A 125	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	
A 125L			P2-B28	15				.18	NO		28	
			P4-20/0	2			.32	.23	NO		31	
A 125R			P2-A28	15				.18	NO		28	
			P4-20/I	2				.21	NO		32, 34, 35	
A 126	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126L			P2-B30	15				.18	NO		28	
			P4-21/0	2			.32	.23	NO		31	
A 126R			P2-A30	15				.18	NO		28	
			P4-21/I	2				.21	NO		32, 34, 35	
A 127	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 127L			P11-32	9				.15	NO		29	
			P2-B25	15				.18	NO		60	
A 127R			P11-31	9				.15	NO		29	
			P2-B24	15				.18	NO		60	
A 128	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 128L			P2-A21	15				.18	NO		60	
			P3-338	12				.18	NO		60	
A 128R			P2-B21	15				.18	NO		60	
			P3-238	12				.18	NO		60	
A 129	17		P2-B17	15				.18	NO		60	
			P3-138	12				.18	NO		60	
A 130	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	
A 130L			P2-K28	15				.18	NO		28	
			P4-25/0	2			.32	.23	NO		31	
A 130R			P2-K29	15				.18	NO		28	
			P4-25/I	2				.21	NO		32, 34, 35	

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A	99974	6900044
SCALE-NONE	REV LTR H	SHEET 51 OF 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 131	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 131L			P2-G5	15				.18	NO		60	
			E11	14				.38	NO			
A 131R			P2-G4	15				.18	NO		60	
			E10	13				.38	NO			
A 132			DELETED									
A 132L			DELETED									
A 132R			DELETED									
A 134	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 134A	17		SHLD A134					.25	NO			
			P2-G23	15				.18	NO		28	
A 134B	14		P8-25/0	7				.23	NO		31, 33	
			SHLD A134					.25	NO			
A 134L			P2-K23	15				.18	NO		28	
			P8-26/0	7			.32	.23	NO		31	
A 134R			P2-H23	15				.18	NO		28	
			P8-26/I	7				.21	NO		32, 34, 35	
A 135	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 52 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 135A	17		SHLD A135					.25	NO			
			P2-G24	15				.18	NO		60	
A 135B	14		P8-16/I	7				.21	NO		32, 34, 35	
			SHLD A135					.25	NO			
A 135L			P2-K24	15				.18	NO		28	
			P8-15/0	7			.32	.23	NO		31	
A 135R			P2-H24	15				.18	NO		28	
			P8-15/I	7				.21	NO		32, 34, 35	
A 136	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 136A	17		SHLD A136					.25	NO			
			P2-G25	15				.18	NO		60	
A 136B	14		P8-16/0	7				.23	NO		31, 33	
			SHLD A136					.25	NO			
A 136L			P2-K25	15				.18	NO		28	
			P8-17/0	7			.32	.23	NO		31	
A 136R			P2-H25	15				.18	NO		28	
			P8-17/I	7				.21	NO		32, 34, 35	
A 137	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 137A	17		SHLD A137					.25	NO			
			P2-G21	15				.18	NO		60	
A 137B	14		P8-19/I	7				.21	NO		32, 34, 35	
			SHLD A137					.25	NO			

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR F	SHEET 53 OF 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 137L			P2-K21	15				.18	NO		28	
			P8-18/0	7			.32	.23	NO		31	
A 137R			P2-H21	15				.18	NO		28	
			P8-18/I	7				.21	NO		32, 34, 35	
A 139	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 139A	17		SHLD A139					.25	NO			
			P2-G22	15				.18	NO		60	
A 139B	14		P8-19/0	7				.23	NO		31, 33	
			SHLD A139					.25	NO			
A 139L			P2-K22	15				.18	NO		28	
			P8-20/0	7			.32	.23	NO		31	
A 139R			P2-H22	15				.18	NO		28	
			P8-20/I	7				.21	NO		32, 34, 35	
A 141	14		P12-4/I	18				.21	NO		40, 51, 35	
			P2-F9	15				.18	NO		28	
A 142			DELETED									
A 142L			DELETED									
A 142R			DELETED									
A 144	27				3.30	3.00				A,6A	33, 19, 20	
					5.30	5.00				B,7	20	

SIZE	CODE IDENT NO.	
A	99974	6900044
SCALE-NONE	REV LTR H	SHEET 54 OF 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 144A	17		SHLD A144 E2	 19				.25 .25	NO NO			
A 144L			P12-16/0 P2-G28	18 15			.22	.23 .18	NO NO		41 28	
A 144R			P12-16/I P2-G31	18 15				.21 .18	NO NO		35, 40, 51 28	
A 145	45				3.30 5.30	3.00 5.00				A,6A B,7	33, 49, 20 20	SEE NOTE 9
A 145A	17		SHLD A145 E2	 19				.25 .25	NO NO			
A 145W			P12-15/0 P2-G30	18 15				.23 .18	NO NO		41 28	
A 147	45				3.30 5.30	3.00 5.00				A,6A B,7	49, 58 58	SEE NOTE 9
A 147A	17		SHLD A147 E2	 19				.25 .25	NO NO			
A 147W			P12-15/I P2-G29	18 15				.21 .18	NO NO		35, 40, 51 28	
A 154	27				2.80 2.80	2.50 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 154B	14		P3-347 SHLD A154	12				.18 .25	NO NO			SEE NOTE 20
A 154L			P14-34/0 P3-247	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

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SCALE-NONE | REV LTR G | SHEET 55 OF 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154R			P14-34/I P3-147	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 155	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 155B	14		P3-647 SHLD A155	12				.18 .25	NO NO			SEE NOTE 20
A 155L			P14-35/0 P3-547	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 155R			P14-35/I P3-447	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 156	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 156B	14		P3-349 SHLD A156	12				.18 .25	NO NO			SEE NOTE 20
A 156L			P14-32/0 P3-249	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20
A 156R			P14-32/I P3-149	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 157	27				5.30 2.80	5.00 2.50				B,7 A,6B	20, 33 19, 20	 SEE NOTE 9
A 157B	14		P3-649 SHLD A157	12				.18 .25	NO NO			SEE NOTE 20
A 157L			P14-33/0 P3-549	17 12			.22	.23 .18	NO NO		41	 SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR G | SHEET 56 OF 72

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 157R			P14-33/I P3-449	17 12				.21 .18	NO NO		40, 51, 35	 SEE NOTE 20
A 158	14		P12-2/0 P3-119	18 12				.23 .18	NO NO		41, 33 28	
A 159	14		P12-9/0 P3-422	18 12				.23 .18	NO NO		41, 33 28	
A 164	27				2.80 2.80	2.50 2.50				B,7 B,7	20, 33 20	
A 164L			P12-31/0 P13-8	17 1			.22	.23 .15	NO NO		41 30	
A 164R			P12-31/I P13-7	17 1				.21 .15	NO NO		40, 51, 35 30	
A 165	27				2.80 5.30	2.50 5.00				B,7 B,7	20, 33 20	
A 165L			P12-46/0 P2-A23	18 15			.22	.23 .18	NO NO		41 28	
A 165R			P12-46/I P2-B23	18 15				.21 .18	NO NO		40, 51, 35 28	
A 171	44				3.30 5.30	3.00 5.00				B,7 B,7	20 20	
A 171L			P12-4/0 E14-8	18 23			.22	.23 .25	NO NO		41, 33	
A 171R			P12-33/0 P2-G8	18 15			.22	.23 .18	NO NO		41, 33 61	 SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR G | SHEET 57 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 171Y			P12-33/I E15	18 23				.21 .38	NO NO		40, 51, 35	
A 178			DELETED									
A 178L			DELETED									
A 178R			DELETED									
A 284	14		P2-A22 P8-41	15 7				.18 .18	NO NO		28 38	
A 344	16				5.30 3.30	5.00 3.00				B,7 B,7	20 20	
A 344L			P2-F14 P1-46	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20
A 344R			P2-G14 P1-45	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20
A 344Y			P2-D14 P1-44	15 3				.18 .18	NO NO		60 39	 SEE NOTE 20
A 345	15				3.30 3.30	3.00 3.00				B,7 B,7	20 20	
A 345L			E11 P1-26	14 3				.38 .18	NO NO			 SEE NOTE 20
A 345R			E13 P1-25	16 3				.38 .18	NO NO			 SEE NOTE 20

SIZE A | CODE IDENT NO. 99974 | 6900044

SCALE-NONE | REV LTR H | SHEET 58 OF 72

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 346	15				3.80 3.80	3.50 3.50				B,7 B,7	20 20	
A 346L			E11 P1-26	14 3				.38 .18	NO NO		 38	
A 346R			E13 P1-25	16 3				.38 .18	NO NO		 38	
A 347	15				3.80 3.80	3.50 3.50				B,7 B,7	20 20	
A 347L			E11 P1-28	14 3				.38 .18	NO NO			 SEE NOTE 20
A 347R			E13 P1-27	16 3				.38 .18	NO NO			 SEE NOTE 20
A 348	17		P2-A8 E13	15 16				.18 .38	NO NO		28	
A 348L			DELETED									
A 348R			DELETED									
A 349	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 349L			P2-G7 P1-19	15 3				.18 .18	NO NO		60	 SEE NOTE 20
A 349R			P2-G6 P1-18	15 3				.18 .18	NO NO		60	 SEE NOTE 20

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	G	SHEET 59 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 350	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 350L			P2-B7 P1-23	15 3				.18 .18	NO NO		60	 SEE NOTE 20
A 350R			P2-B6 P1-22	15 3				.18 .18	NO NO		60	 SEE NOTE 20
A 351	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 351L			P2-F7 P1-21	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 351R			P2-F6 P1-20	15 3				.18 .18	NO NO		60 38	 SEE NOTE 20
A 352	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 352L			P2-A7 P1-21	15 3				.18 .18	NO NO		60	 SEE NOTE 20
A 352R			P2-A6 P1-20	15 3				.18 .18	NO NO		60	 SEE NOTE 20
A 353	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 353L			P2-A5 E11	15 14				.18 .38	NO NO		60	
A 353R			P2-A4 E10	15 13				.18 .38	NO NO		60	

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	G	SHEET 60 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 354	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 354L			P2-B5 E11	15 14				.18 .38	NO NO		60	
A 354R			P2-B4 E10	15 13				.18 .38	NO NO		28	
A 355	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 355L			P2-C5 E11	15 14				.18 .38	NO NO		60	
A 355R			P2-C4 E10	15 13				.18 .38	NO NO		60	
A 356	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 356L			P2-D5 E11	15 14				.18 .38	NO NO		60	
A 356R			P2-D4 E10	15 13				.18 .38	NO NO		60	
A 357	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A 357L			P2-F5 E11	15 14				.18 .38	NO NO		60	
A 357R			P2-F4 E10	15 13				.18 .38	NO NO		60	

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 61 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 358	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A 358A	17		SHLD A358 E4					.25 .38	NO NO			
A 358B	17		P5-42 SHLD A358	4				.15 .25	NO NO		30	
A 358L			P3-337 P5-41	12 4				.18 .15	NO NO		60 30	
A 358R			P3-237 P5-40	12 4				.18 .15	NO NO		60 30	
A 359	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A 359A	17		SHLD A359 E4					.25 .38	NO NO			
A 359B	17		P5-45 SHLD A359	4				.15 .25	NO NO		30	
A 359L			P3-537 P5-44	12 4				.18 .15	NO NO		60 30	
A 359R			P3-437 P5-43	12 4				.18 .15	NO NO		60 30	
A 360	14		P3-611 P9-33/0	12 6				.18 .23	NO NO		28 41, 33	
A 361	15				5.30 2.60	5.00 2.30				B,7 A,6B	20 19, 20	

SIZE A	CODE IDENT NO. 99974	6900044	
SCALE-NONE	REV LTR	F	SHEET 62 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 361B	17		P5-81 SHLD A361	4				.15 .25	NO NO		30	
A 361L			P2-K15 P5-83	15 4				.18 .15	NO NO		60 30	
A 361R			P2-H15 P5-82	15 4				.18 .15	NO NO		60 30	
A 365	14		P14-48/I P1-12	18 3				.21 .18	NO NO		40, 51, 35 38	
A 366	17		P3-236 E12	12 11				.18 .38	NO NO		60	
A 367	17		P3-436 E12	12 11				.18 .38	NO NO		60	
A 385	53				3.80 3.80	3.50 3.50				B,7 B,7	59 59	
A 385L			P10-B E11	10 14				.28 .38	YES NO			
A 385R			P10-A E10	10 13				.28 .38	YES NO			
A 387	18		P10-H E13	10 16				.28 .38	YES NO			
A 397	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 397L			P2-K12 P1-42	15 3				.18 .18	NO NO		60	SEE NOTE 20

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 63 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 397R			P2-H12 P1-41	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 398L			P2-F11 P1-34	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398R			P2-D11 P1-32	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 398Y			P2-G11 P1-33	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399	16				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A 399L			P2-F13 P1-46	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399R			P2-D13 P1-44	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 399Y			P2-G13 P1-45	15 3				.18 .18	NO NO		60	SEE NOTE 20
A 417	14		P14-48/O P1-13	18 3			.22	.23 .18	NO NO		41, 33 38	
A 420	14		P2-G20 P8-44/I	15 7				.18 .21	NO NO		28 32, 34, 35	
A 421	14		P2-H20 P8-44/O	15 7				.18 .23	NO NO		28 31, 33	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR F
SHEET 64 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 424	17		P2-G18 P4-22	15 2				.18 .18	NO NO		60 38	
A 426	18		P10-M E12	10 11				.28 .38	YES NO			
A 442	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 442B	14		P3-646 SHLD A442	12				.18 .25	NO NO			SEE NOTE 20
A 442L			P12-24/O P3-546	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 442R			P12-24/I P3-446	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 443	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 443B	14		P3-348 SHLD A443	12				.18 .25	NO NO			SEE NOTE 20
A 443L			P12-25/O P3-248	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 443R			P12-25/I P3-148	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 444	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 444B	14		P3-648 SHLD A444	12				.18 .25	NO NO			SEE NOTE 20

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR G
SHEET 65 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 444L			P12-26/O P3-548	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 444R			P12-26/I P3-448	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 445	27				3.80 5.30	3.50 5.00				B,7 A,6B	19, 20, 33 20	SEE NOTE 9
A 445B	14		P3-346 SHLD A445	12				.18 .25	NO NO			SEE NOTE 20
A 445L			P12-23/O P3-246	18 12			.22	.23 .18	NO NO		41	SEE NOTE 20
A 445R			P12-23/I P3-146	18 12				.21 .18	NO NO		40, 51, 35	SEE NOTE 20
A 446	18		P10-E E10	10 13				.28 .38	YES NO			
A 449	18		P10-G E11	10 14				.28 .38	YES NO			
A 450	18		P10-N E11	10 14				.28 .38	YES NO			
A 453	18		P10-U P10-C*	10 10				.28 .28	YES YES			
A 454	18		P10-F E13	10 16				.28 .38	YES NO			
A 455	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

SIZE A
CODE IDENT NO. 99974
6900044
SCALE-NONE
REV LTR G
SHEET 66 OF 72

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 455A	17		SHLD A455					.25	NO			
			E4	22				.38	NO			
A 455B	17		P5-27	4				.15	NO		30	
			SHLD A455					.25	NO			
A 455L			P3-233	12				.18	NO		28	
			P5-26	4				.15	NO		30	
A 455R			P3-133	12				.18	NO		60	
			P5-25	4				.15	NO		30	
A 456	15				5.30	5.00				B,7	20	
					2.60	2.30				B,7	20	
A 456L			P2-G16	15				.18	NO		60	
			P5-80	4				.15	NO		30	
A 456R			P2-H16	15				.18	NO		60	
			P5-79	4				.15	NO		30	
A 457	44				5.30	5.00				B,7	20	
					3.30	3.00				B,7	20	
A 457L			E14-B	23				.25	NO			
			P11-9	9				.15	NO		29	
A 457R			P2-G8	15				.18	NO			SEE NOTE 20
			P11-7	9				.15	NO		29	
A 457Y			E15	23				.38	NO			
			P11-8	9				.15	NO		29	
A 458	18		E1	21				.25	NO			
			E3	20				.25	NO			

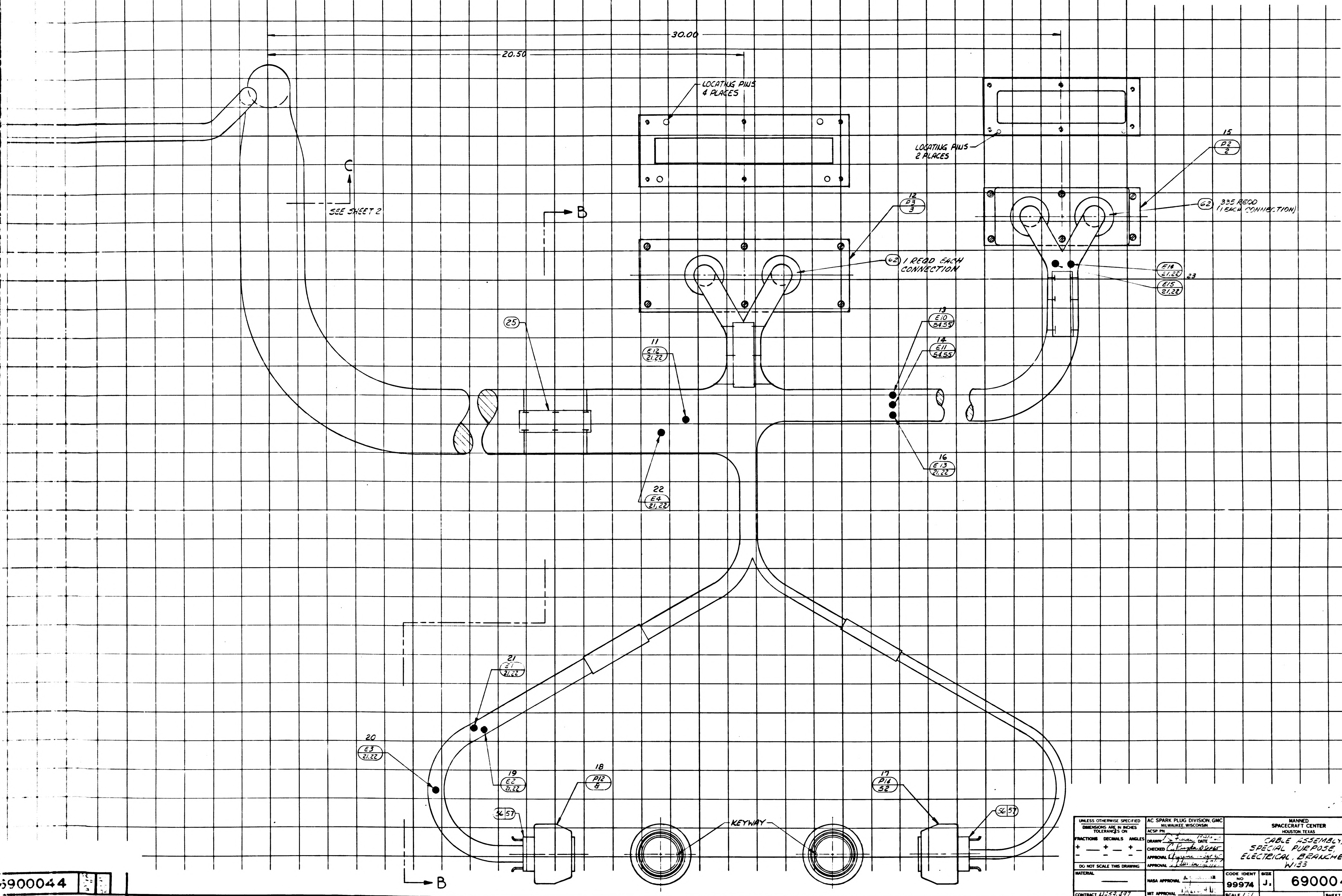
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 459	18		E2	19				.25	NO			
			E3	20				.25	NO			
A 460	18		E3	20				.25	NO			
			P12-44	18				.25	NO		36	
A 461	17		P9-55	6				.21	NO		37	
			P3-438	12				.18	NO		60	
A 462	17		E4	22				.38	NO			
A 463	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 463L			P11-66	9				.15	NO		29	
			E14-B	23				.25	NO			
A 463R			P11-65	9				.15	NO		29	
			P2-A27	15				.18	NO		60	
A 464	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 464L			P11-68	9				.15	NO		29	
			E14-B	23				.25	NO			
A 464R			P11-67	9				.15	NO		29	
			P2-A29	15				.18	NO		60	
A 465	15				4.80	4.50				B,7	20	
					4.80	4.50				B,7	20	
A 465L			P11-70	9				.15	NO		29	
			E14-B	23				.25	NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 465R			P11-69	9				.15	NO		29	
			P2-A31	15				.18	NO		60	
A 466	14		P2-H17	15				.25	NO		28	
			P8-42/O	7				.23	NO		31, 34, 35	
A 467	17		P6-37	5				.15	NO		29	
			P6-38	5				.15	NO		29	
A 468	14		P1-50/I	3				.21	NO		31, 33	
			P1-50/O	3				.23	NO		32, 34, 35	
A 469	14		P9-40/I	6				.21	NO		40, 51, 35	
			P3-522	12				.18	NO		28	
A 470	14		P9-40/O	6				.23	NO		41, 33	
			P3-622	12				.18	NO		28	
A 471	17		P2-K4	15				.18	NO		60	
			E13	16				.38	NO			
A 472	17		P2-C8	15				.18	NO		60	
			P1-2	3				.18	NO		38	
A 473	17		P2-B8	15				.18	NO		60	
			P1-55	3				.18	NO		38	
A 474			DELETED									
A 474L			DELETED									
A 474R			DELETED									

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 475	17		E14-B	23				.25	NO			
			P2-G9	15				.18	NO		60	
A 476	17		P12-12/O	18				.23	NO		41, 33	
			P2-B27	15				.18	NO		60	
A 477	14		P12-12/I	18				.21	NO		51, 40, 35	
			P2-B29	15				.18	NO		60	
A 478	14		P12-14/I	18				.21	NO		51, 40, 35	
			P2-B31	15				.18	NO		60	
A 479	17		P12-14/O	18				.23	NO		41, 33	
			E14-B	23				.25	NO			
A 480	18		E13	23				.38	NO			
			E15	23				.38	NO			
A 481	17		P2-H18	15				.18	NO		60	
			P4-54	2				.21	NO		38	

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO		

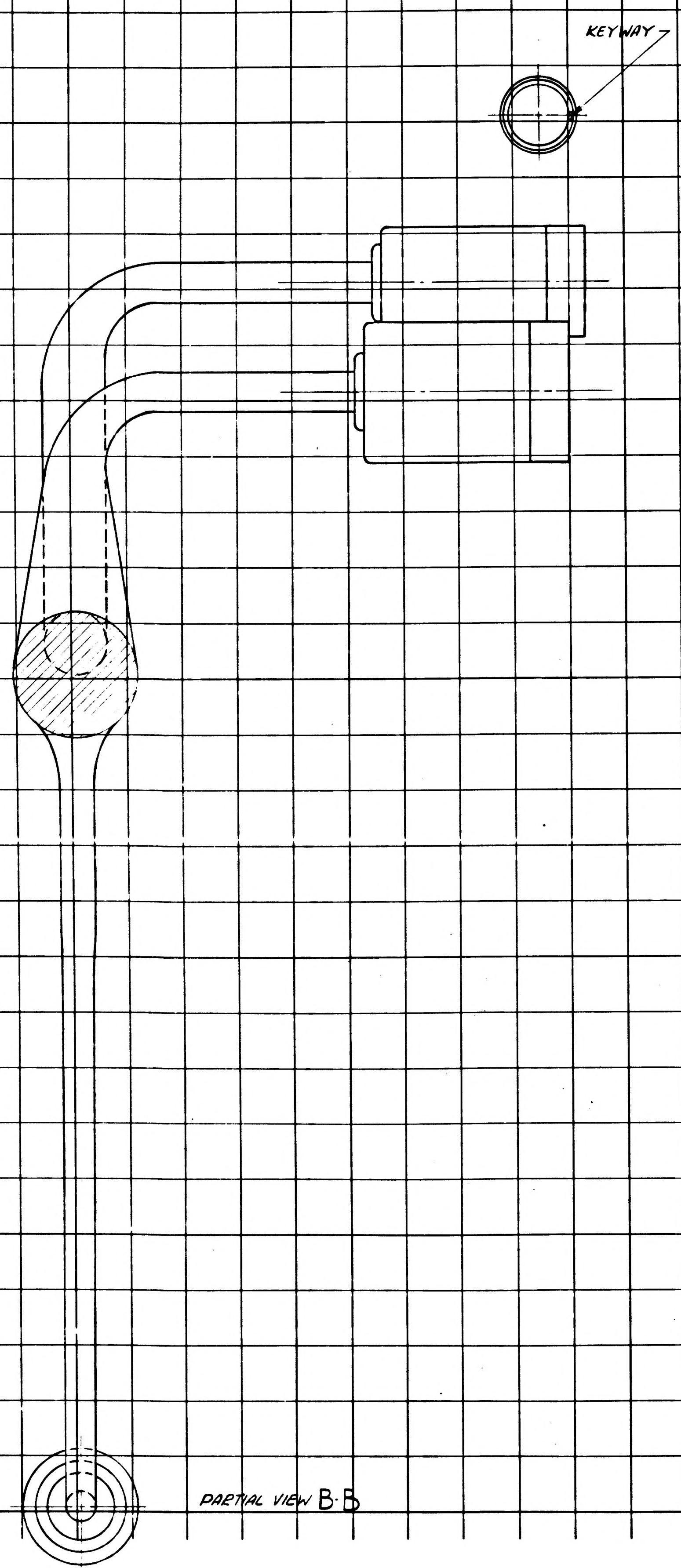
SEE SHEET I FOR REVISION RECORD


30.00
20.50
LOCATING PINS 4 PLACES
LOCATING PINS 2 PLACES
C
SEE SHEET 2
B
15
P2
2
62
335 REQD (1 EACH CONNECTION)
12
P3
3
62
1 REQD EACH CONNECTION
E14
21,22
23
E15
21,22
25
11
E12
21,22
13
E10
54,55
14
E11
54,55
16
E13
21,22
22
E4
21,22
21
E1
21,22
20
E3
21,22
19
E2
21,22
18
P12
8
17
P14
52
56
57
KEYWAY
B

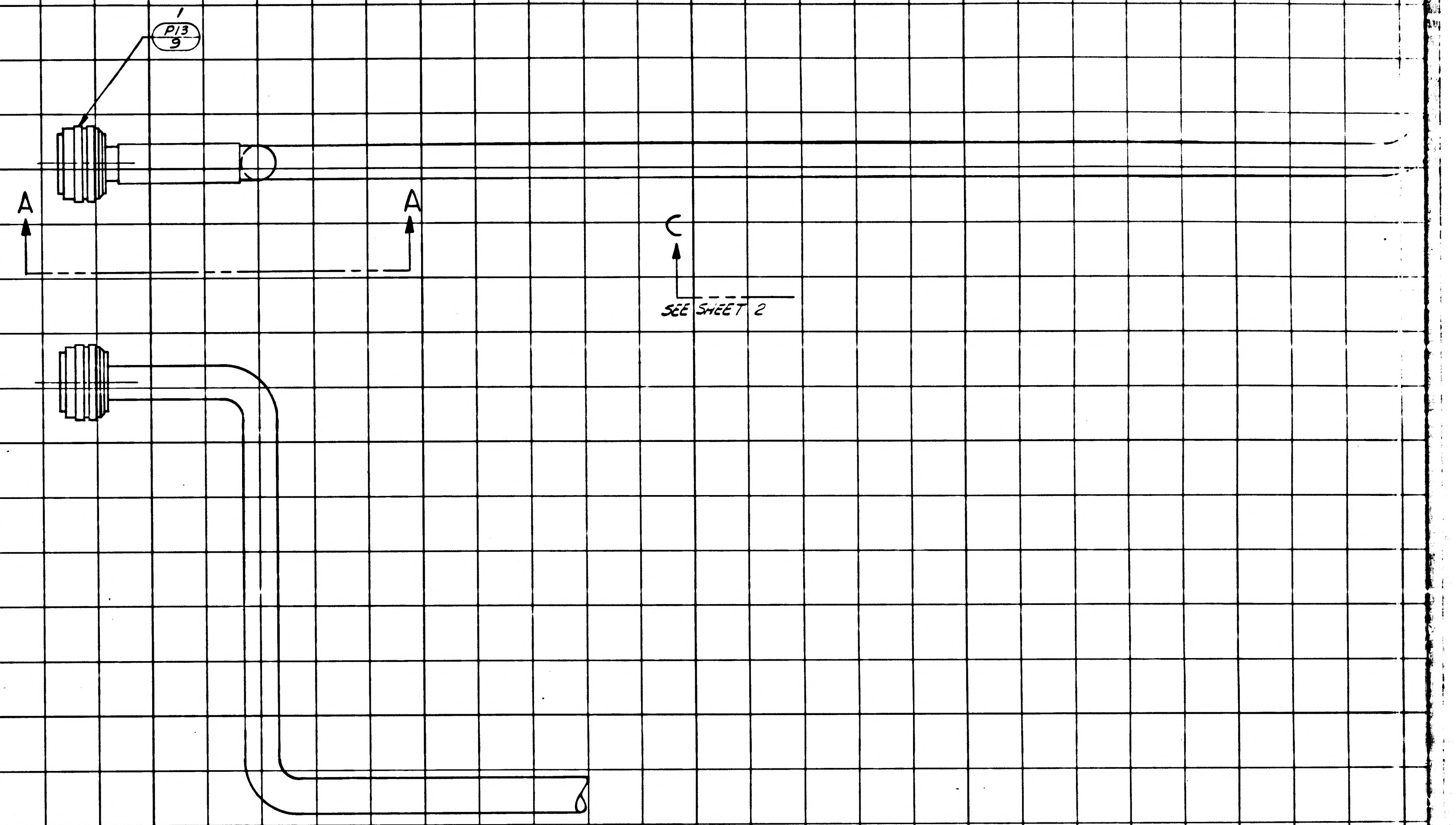
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ___ ± ___ ± ___	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
DO NOT SCALE THIS DRAWING	DRAWN Finan DATE 19 Aug 65 CHECKED 10 Sep 65 APPROVAL 10 Sep 65 APPROVAL	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED W133
MATERIAL ___	NASA APPROVAL	CODE IDENT NO 99974 | SIZE J₂ | 6900044
CONTRACT NAS9-497	MIT APPROVAL	SCALE 1:1 | SHEET [illegible] OF 7

6900044

2/6900044



PARTIAL VIEW B-B



PARTIAL VIEW A-A

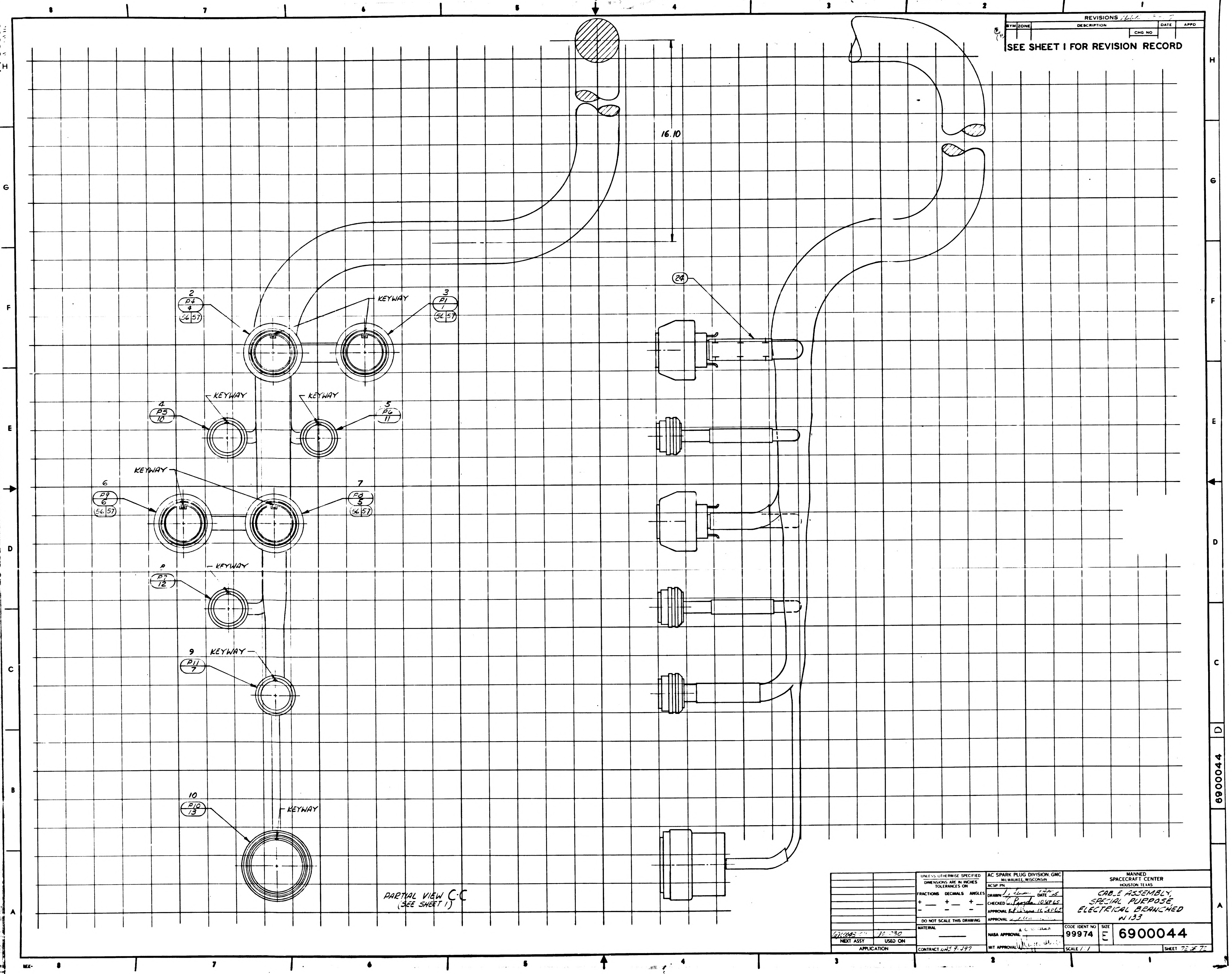
TABLE I

PLUG	TERMINATION MARKING
P1	W133-P1 (J11-GDB)
P2	W133-P2 (PSA)
P3	W133-P3 (CDU)
P4	W133-P4 (J12 GDB)
P5	W133-P5 (J16 GDB)
P6	W133-P6 (J15-GDB)
P7	W133-P7 (J23-GDB)
P8	W133-P8 (J19-GDB)
P9	W133-P9 (J20-GDB)
P10	W133-P10 (J33-GDB)
P11	W133-P11 (J26-GDB)
P12	W133-P12 (J1-TPA #2)
P13	W133-P13 (J215-SMF)
P14	W133-P14 (J2-TPA #2)

6900044

MIL 1050J8 D

1/6900044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24
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12
KEYWAY
9
P11
7
KEYWAY
10
P10
13
KEYWAY
PARTIAL VIEW C-C
(SEE SHEET 1)
8
7
6
5
4
3
2
1
H
G
F
E
D
C
B
A

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

SEE SHEET I FOR REVISION RECORD

NEXT ASSY	USED ON
6900043	900030

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 65
CHECKED C. Pazda 10SEP65
APPROVAL 10SEP65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL BRANCHED
W133

CODE IDENT NO 99974
SIZE E
6900044
SCALE 1/1
SHEET 72 OF 72

6900044 D

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	INITIAL RELEASE CLASS A PER TDRR 23507	18 OCT '65	KES

REV			
SHEET			
REV STATUS	REV	A	A
OF SHEETS	SHEET	1	2

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 23 AUG 65
CHECKED Fesler 25AUG65
APPROVAL C W Wise 25AUG65
APPROVAL Gelman 10/26/65

NASA APPROVAL A. C. METZGER
MIT APPROVAL 4Nov65

CONTRACT NAS9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL-
W157

CODE IDENT NO.	SIZE		REV
99974	A	6900045	A

SCALE ~

SHEET 1 OF 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
3. THIS IS AN INCOMPLETE DRAWING.

SEE NOTE 2

SEE NOTE 2

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	200	1010763-2	SOLDER SLEEVE
	100	1897262-002	CONTACT, ELECTRICAL, MALE
	40	1016369-713	OUTER SLEEVE
	40	1016369-711	INNER SLEEVE
	40	1016369-588	HYRING
	40	1016369-488	CONTACT, OUTER FEMALE
	40	1016369-188	CONTACT, INNER MALE
	80	1897300-001	CONTACT, ELECTRICAL, SOCKET
	1	1897335-001	CONNECTOR, RECEPTACLE, ELEC
	100	1897264	INSULATOR, BUSHING, MALE

LIST OF PARTS AND MATERIALS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION
A

NASA DRAWING NO.
6900045
SHEET 2 OF 2

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-011	1900030	A	INITIAL RELEASE CLASS A PER TDRR 23807	18 OCT. 65	TE

REV			
SHEET			
REV STATUS	REV	A	A
OF SHEETS	SHEET	1	2

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN D. J. Fluder DATE 24 AUG 65
CHECKED Seymoure 25AUG65
APPROVAL C. W. Wise 25 Aug. 65
APPROVAL L. Gediman 10/27/65

ADAPTER, CABLE
SCM

A. C. METZGER
NASA APPROVAL
MIT APPROVAL W Kupfer 4 Nov

CODE IDENT NO. 99974
SIZE A
6900046
REV A

CONTRACT NAS 9-497
SCALE —
SHEET 1 OF 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
3. THIS IS AN INCOMPLETE DRAWING.

SEE NOTE 2

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	200	1897300-001	CONTACT, ELECTRICAL
	80	1016369-713	ADAPTER
	80	1016369-711	SUPPORT, SLEEVE, FEMALE
	80	1016369-588	HYRING
	80	1016369-488	CONTACT, OUTER FEMALE
	80	1016369-188	CONTACT, INNER MALE
	300	1897265	INSULATOR, BUSHING
	300	1897263-001	CONTACT, ELECTRICAL, FEMALE
	300	1897264	INSULATOR, BUSHING
	300	1897262-001	CONTACT, ELECTRICAL, MALE
	1	1897252-104	CONNECTOR, RECEP, ELEC
	1	1897335-001	CONNECTOR, RECEP, ELEC

SEE NOTE 2

LIST OF PARTS AND MATERIALS

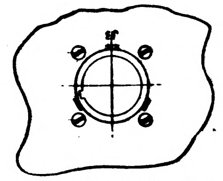
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION
A

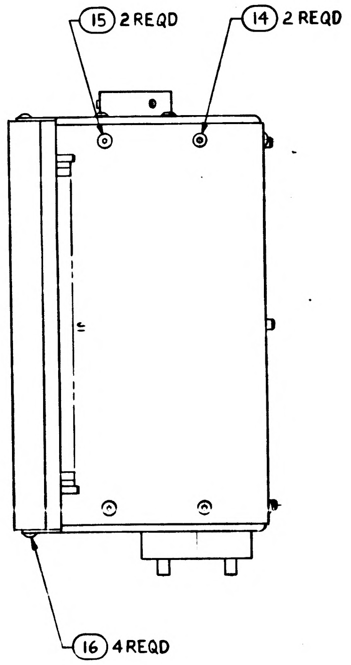
NASA DRAWING NO.
6900046
SHEET 2 OF 2

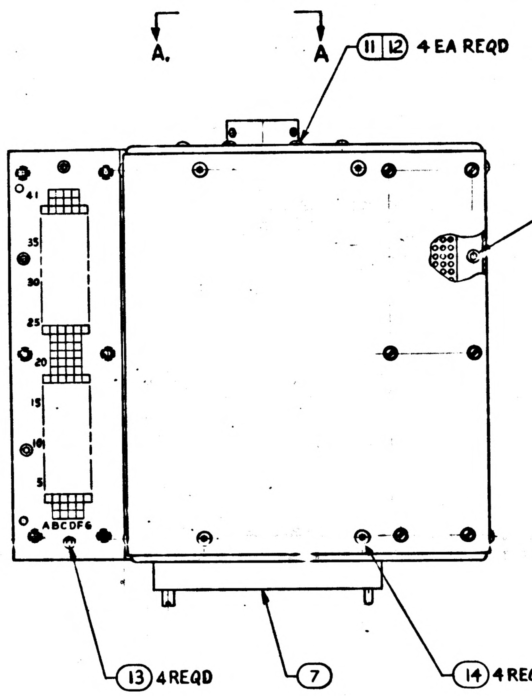
REVISIONS — DCR 23807					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	B	REPLACES REV A WITH CHANGE PER TDRR 25335			DW

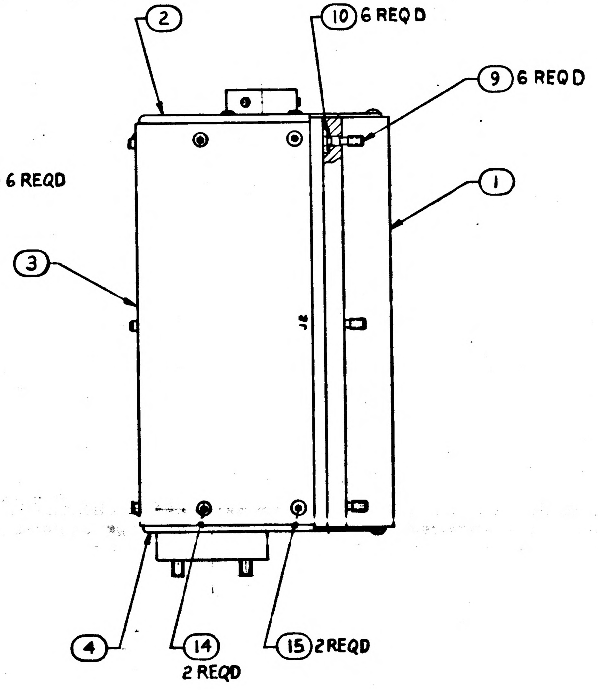
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NO. PREFIXED BY "ASSY" WITH APPLICABLE DASH NO. PER MIL-STD-130 (ES267).
3. VENDOR ITEM: SEE SPECIFICATION CONTROL OR SOURCE CONTROL DRAWING.

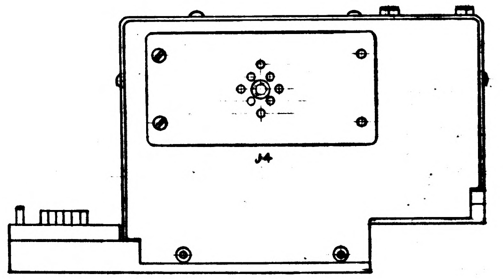


PARTIAL VIEW A-A









				ON	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 3				4		16	1010618-15	SCREW, BUTTON HD
SEE NOTE 3				4		15	1010477-13	SCREW, FH, 100°
SEE NOTE 3				8		14	1010618-13	SCREW, BUTTON HD
SEE NOTE 3				10		13	1001488-2	SCREW, HEX SOCKET HD
SEE NOTE 3				4		12	1016151-004	NUT SELF LOCKING
SEE NOTE 3				4		11	1006783-95	SCREW, BUTTON HD
				6		10	MS16633-4015	RING, RETAINING
				6		9	6900058	SCREW, EXT RELIEVED BODY
						8		
				1	U	7	6900064	WIRE HARNESS "A"
						6		
						5		
				1		4	6900054	COVER, LEFT SIDE
				1		3	6900053	COVER, TOP
				1		2	6900055	COVER, RIGHT SIDE
				1		1	6900052	BASE

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900043-011	1900030	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN L Krahn DATE 10 NOV 65
CHECKED Moore 15 NOV 65
APPROVAL 15 NOV 65
APPROVAL 1-14-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 18 Jan 66

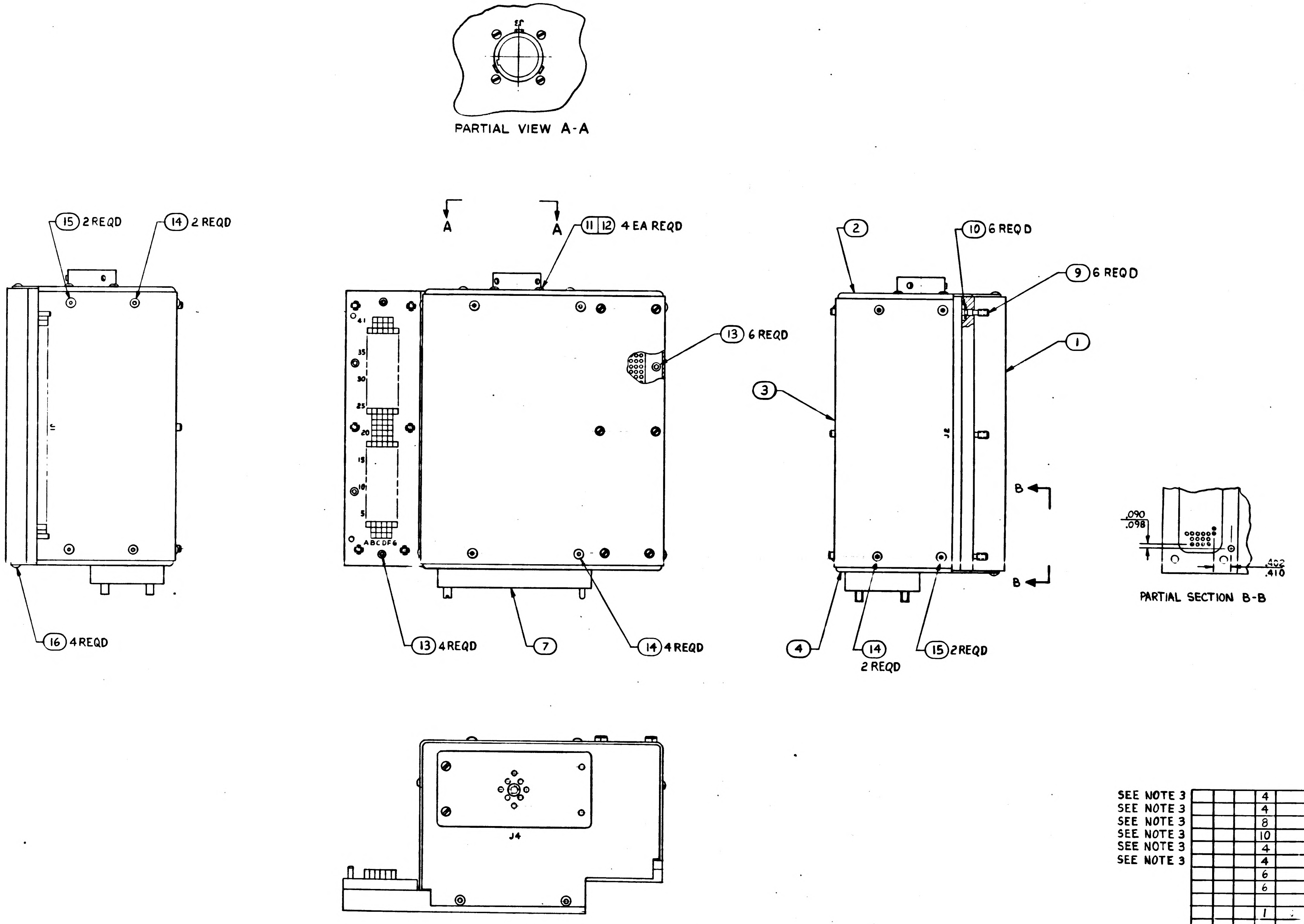
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTING BOX-
SCM

CODE IDENT NO. 99974
SIZE E
6900046
SCALE FULL
SHEET 1 OF 1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NO. PREFIXED BY "ASSY" WITH APPLICABLE DASH NO. PER MIL-STD-130 (ES267).
3. VENDOR ITEM: SEE SPECIFICATION CONTROL OR SOURCE CONTROL DRAWING.

REVISIONS TDRR 23807					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	B	REPLACES REV A WITH CHANGE PER TDRR 25335			
	C	REVISED PER TDRR 25403		2 FEB 66	



SEE NOTE 3				4		16	1010618-15	SCREW, BUTTON HD
SEE NOTE 3				4		15	1010477-13	SCREW, FH, 100°
SEE NOTE 3				8		14	1010618-13	SCREW, BUTTON HD
SEE NOTE 3				10		13	1001488-2	SCREW, HEX SOCKET HD
SEE NOTE 3				4		12	1016151-004	NUT, SELF LOCKING
SEE NOTE 3				4		11	1006783-95	SCREW, BUTTON HD
				6		10	MS16633-4015	RING, RETAINING
				6		9	6900058	SCREW, EXT RELIEVED BODY
						8		
				1		7	6900064	WIRE HARNESS "A"
						6		
						5		
				1		4	6900054	COVER, LEFT SIDE
				1		3	6900053	COVER, TOP
				1		2	6900055	COVER, RIGHT SIDE
				1		1	6900052	BASE
				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900043-011	1900030	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS

DRAWN L Krahn DATE 10 NOV 65
CHECKED 15 NOV 65
APPROVAL R. Foss 15 NOV 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTING BOX-
SCM

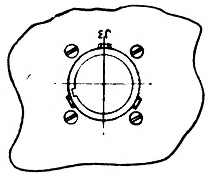
CODE IDENT NO. 99974
SIZE E
6900046
SCALE
SHEET OF 1

NOTES:

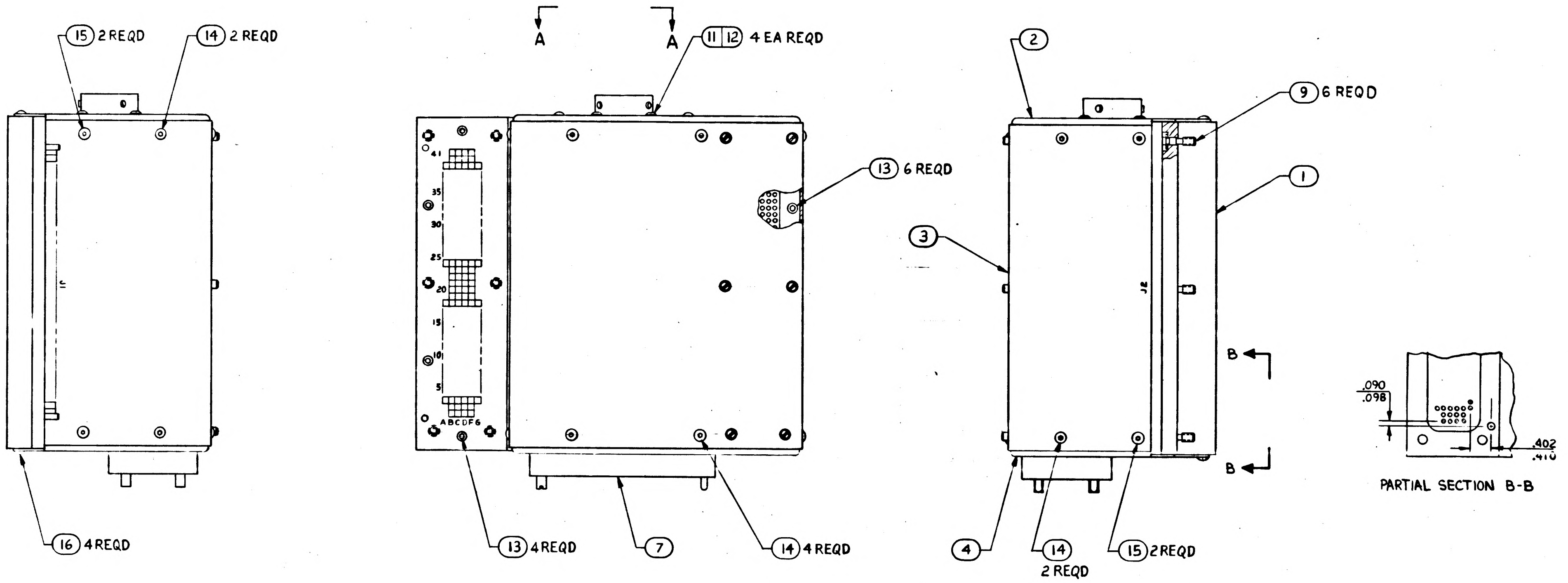
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NO. PREFIXED BY "ASSY" WITH APPLICABLE DASH NO. PER MIL-STD-130 (ES267).
3. VENDOR ITEM: SEE SPECIFICATION CONTROL OR SOURCE CONTROL DRAWING.

REVISIONS TDRR 23807

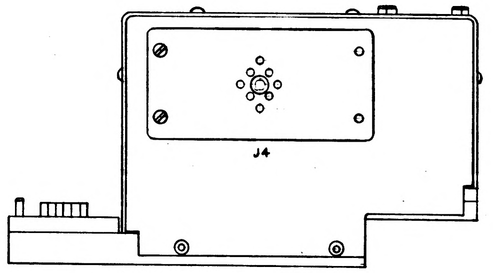
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	B	REPLACES REV A WITH CHANGE PER TDRR 25335			DM
	C	REVISED PER TDRR 25403		2 FEB 66	
	D	REVISED PER TDRR 26091		16 FEB 66	



PARTIAL VIEW A-A



PARTIAL SECTION B-B



SEE NOTE 3				4		16	1010618-15	SCREW, BUTTON HD
SEE NOTE 3				4		15	1010477-13	SCREW, FH, 100°
SEE NOTE 3				8		14	1010618-13	SCREW, BUTTON HD
SEE NOTE 3				10		13	100488-2	SCREW, HEX SOCKET HD
SEE NOTE 3				4		12	10 6151-004	NUT, SELF LOCKING
SEE NOTE 3				4		11	1006783-95	SCREW, BUTTON HD
				~~6~~		10	~~VS16633-4015~~	~~RING, RETAINING~~
				6		9	6900058	SCREW, EXT RELIEVED BODY
						8		
				1		7	6900064	WIRE HARNESS "A"
						6		
						5		
				1		4	6900054	COVER, LEFT SIDE
				1		3	6900053	COVER, TOP
				1		2	6900055	COVER, RIGHT SIDE
				1		1	6900052	BASE
				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900043-011	1900030	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9 497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS

DRAWN L Hrahn DATE 10 NOV 65
CHECKED Zmoure 15 NOV 65
APPROVAL K. Goss 15 NOV 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

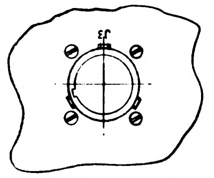
INTERCONNECTING BOX-
SCM

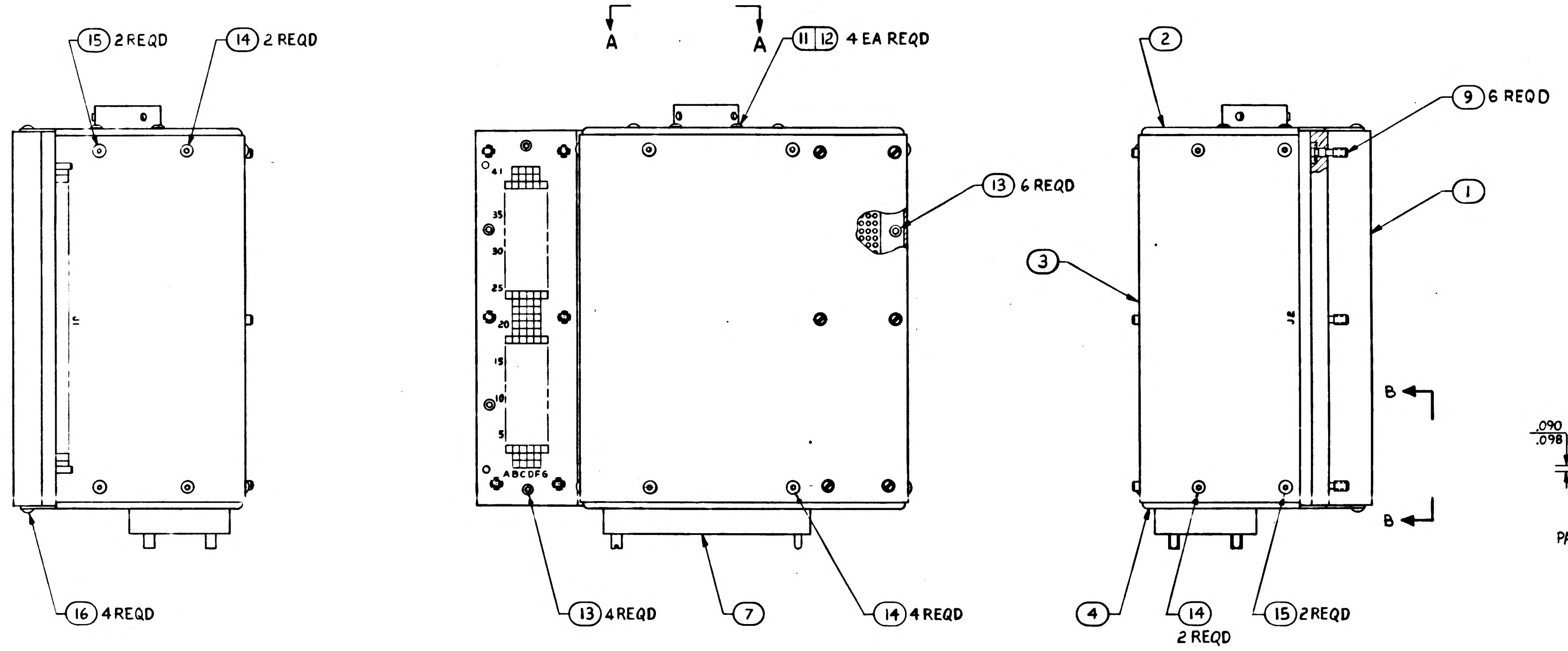
CODE IDENT NO. 99974
SIZE E
6900046
SCALE
SHEET OF 1

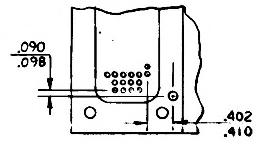
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NO. PREFIXED BY "ASSY" WITH APPLICABLE DASH NO. PER MIL-STD-130 (ES267).
3. VENDOR ITEM: SEE SPECIFICATION CONTROL OR SOURCE CONTROL DRAWING.
4. SERIALIZE PER ND 1002023.

REVISIONS TDRR 23807

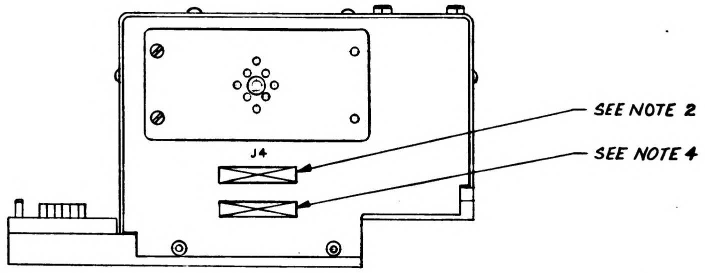
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	B	REPLACES REV A WITH CHANGE PER TDRR 25335			DM
	C	REVISED PER TDRR 25403		2 FEB 66	
	D	REVISED PER TDRR 26091		16 FEB 66	
	E	REVISED PER TDRR 26739		8 MAR 66	


PARTIAL VIEW A-A





PARTIAL SECTION B-B



						ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 3				4		16	1010618-15	SCREW, BUTTON HD
SEE NOTE 3				4		15	1010477-13	SCREW, FH, 100°
SEE NOTE 3				8		14	1010618-13	SCREW, BUTTON HD
SEE NOTE 3				10		13	1001488-2	SCREW, HEX SOCKET HD
SEE NOTE 3				4		12	1016151-004	NUT, SELF LOCKING
SEE NOTE 3				4		11	1006783-95	SCREW, BUTTON HD
				~~6~~		10	~~MS16633-4015~~	~~RING, RETAINING~~
				6		9	6900058	SCREW, EXT RELIEVED BODY
						8		
				1		7	6900064	WIRE HARNESS "A"
						6		
						5		
				1		4	6900054	COVER, LEFT SIDE
				1		3	6900053	COVER, TOP
				1		2	6900055	COVER, RIGHT SIDE
				1		1	6900052	BASE
				011	EFFECTIVITY			
	QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900043-011	1900030	011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9 497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN E. Krahn DATE 15 NOV 65
CHECKED 15 NOV 65
APPROVAL 15 NOV 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTING BOX-
SCM

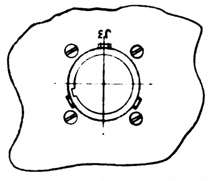
CODE IDENT NO. 99974
SIZE E
6900046
SCALE FULL
SHEET 1 OF 1

NOTES:

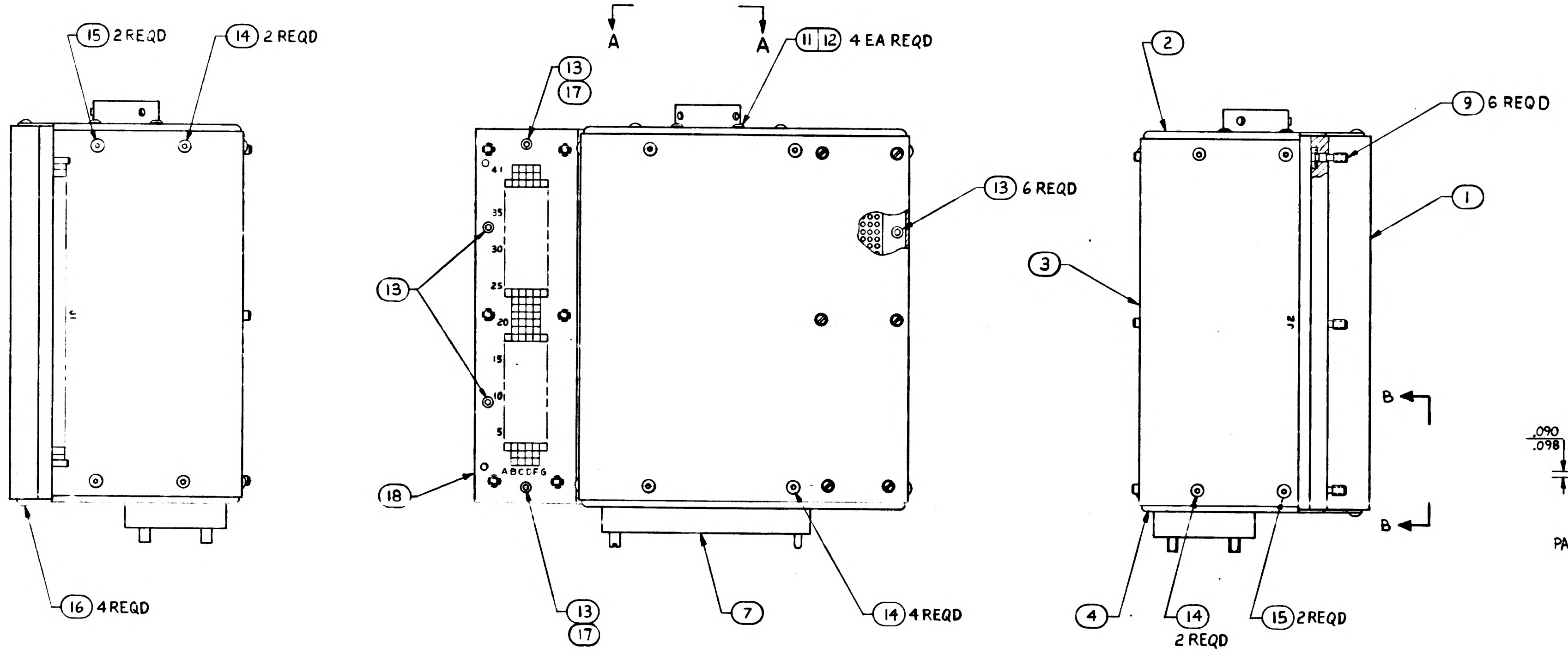
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NO. PREFIXED BY "ASSY" WITH APPLICABLE DASH NO. PER MIL-STD-130 (ES267).
3. VENDOR ITEM: SEE SPECIFICATION CONTROL OR SOURCE CONTROL DRAWING.
4. SERIALIZE PER ND 1002023.

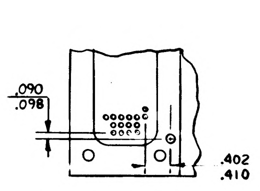
REVISIONS TDRR 2[illegible]

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	B	REPLACES REV A WITH CHANGE PER TDRR 25335			DMF
	C	REVISED PER TDRR 25403		2 FEB 66	
	D	REVISED PER TDRR 26091		16 FEB 66	
	E	REVISED PER TDRR 26739		8 MAR 66	
	F	Revised Per TDRR 28780		17 MAY 66	

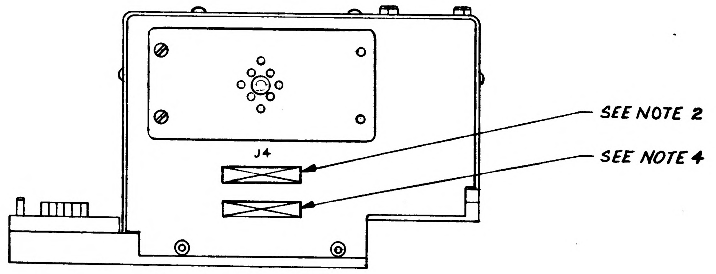


PARTIAL VIEW A-A





PARTIAL SECTION B-B



			021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1			18	6900139	SPACER, CONNECTOR
			2			17	MS35200-16	SCREW, FLAT HD
SEE NOTE 3			4	4		16	1010618-15	SCREW, BUTTON HD
SEE NOTE 3			4	4		15	1010477-13	SCREW, FH, 100°
SEE NOTE 3			8	8		14	1010618-13	SCREW, BUTTON HD
SEE NOTE 3			8	10		13	1001488-2	SCREW, HEX SOCKET HD
SEE NOTE 3			4	4		12	1016151-004	NUT, SELF LOCKING
SEE NOTE 3			4	4		11	1006783-95	SCREW, BUTTON HD
				~~6~~		10	~~MS16633-4015~~	~~RING, RETAINING~~
			6	6		9	6900058	SCREW, EXT RELIEVED BODY
						8		
			1	1		7	6900064	WIRE HARNESS "A"
						6		
						5		
			1	1		4	6900054	COVER, LEFT SIDE
			1	1		3	6900053	COVER, TOP
			1	1		2	6900055	COVER, RIGHT SIDE
			1	1		1	6900052	BASE

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900043-011	1900030	011

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9 497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN L Krahn DATE [illegible] NOV 65
CHECKED [illegible] 15 NOV 65
APPROVAL R. Ross 15 NOV 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

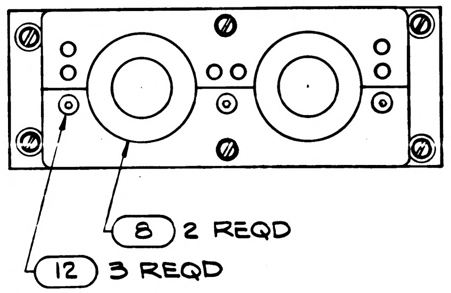
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

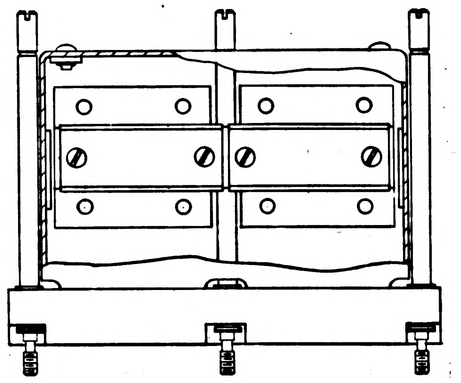
INTERCONNECTING BOX-
SCM

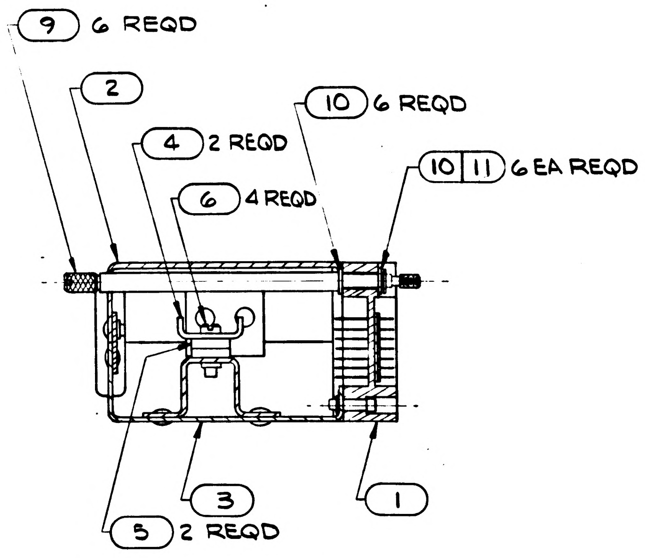
CODE IDENT NO. 99974
SIZE E
6900046
SCALE FULL
SHEET OF 1

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		INITIAL RELEASE CLASS A PER TDRR 23807		18 OCT 65	

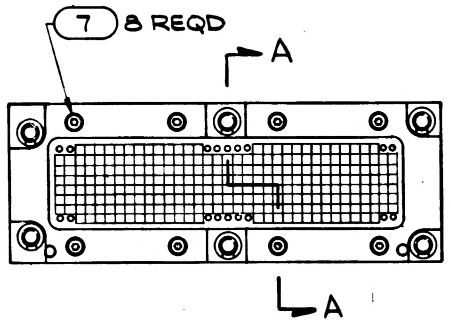
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. BOND ITEM ⑤ TO ITEM ④ PER ND1002151.
3. VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.
4. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES267).







SECTION AA



SEE NOTE 3

SEE NOTE 3

QUANTITY REQUIRED 011	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
3	12	1006783-19	SCREW, BUTTON HEAD
6	11	MS16633-4015	RING, RETAINING "E"
12	10	1897324-002	WASHER, FLAT
6	9	2900676-2	SCREW, JACK
2	8	MS35489-20	GROMMET, RUBBER
8	7	1017418-11	SCREW, CAP, SOC HD
4	6	1017429-4	SCREW, SHOULDER
2	5	2900580-006	GASKET
2	4	2900711-006	CLAMP, MOVABLE
1	3	6900049	SHELL, CLAMP (INSEP ASSY)
1	2	6900048	SHELL, COVER (INSEP ASSY)
1	1	6900047	BASE, CONNECTOR

EFFECTIVITY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900044	6900043	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Cookman DATE 8 SEP 65
CHECKED 10 SEP 65
APPROVAL R. Foss 10 SEP 65
APPROVAL C Sparling 10/28/65
NASA APPROVAL
MIT APPROVAL 4 Nov 65

10 SEP 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONNECTOR, PLUG,
ELECTRICAL - 262 PIN

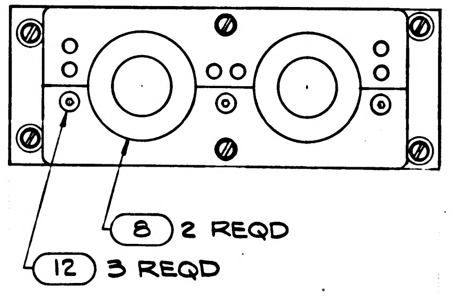
CODE IDENT NO. 99974
SIZE D
6900050
SCALE 1/1
SHEET 1 OF 1

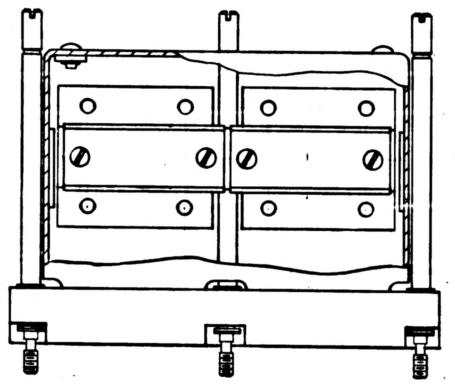
MIL 10780-P

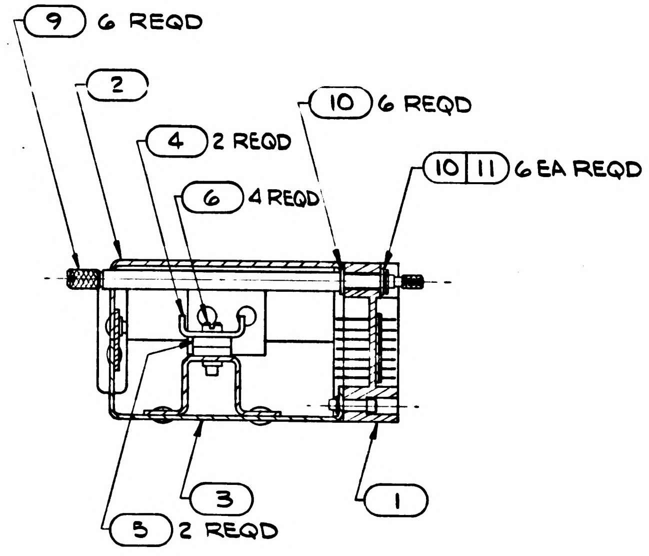
B | 6900050 | 2

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. BOND ITEM ⑤ TO ITEM ④ PER ND1002151.
3. VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.
4. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES267).

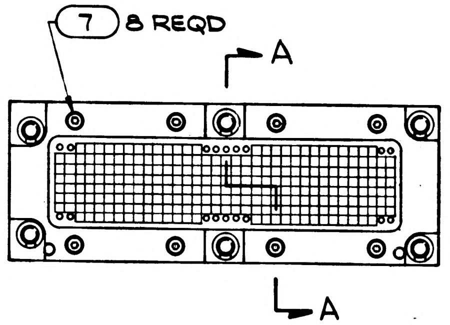
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		INITIAL RELEASE CLASS A PER TDRR 23807		10 OCT 65	
B		REVISED PER TDRR 28960		23 MAY 66	CP







SECTION AA



SEE NOTE 3

SEE NOTE 3

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			3		12	1006783-19	SCREW, BUTTON HEAD
			6		11	MS16633-4015	RING, RETAINING "E"
			12		10	1897324-002	WASHER, FLAT
			6		9	2900676-2	SCREW, JACK
			2		8	MS35489-20	GROMMET, RUBBER
			8		7	1017418-11	SCREW, CAP, SOC HD
			4		6	2901022-004	SCREW, SHOULDER
			2		5	2900580-006	GASKET
			2		4	2900711-006	CLAMP, MOVABLE
			1		3	6900049	SHELL, CLAMP (INSEP ASSY)
			1		2	6900048	SHELL, COVER (INSEP ASSY)
			1		1	6900047	BASE, CONNECTOR

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900044	6900043	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN Lookman DATE 8 SEP 65
CHECKED 10 SEP 65
APPROVAL R. Foss 10 SEP 65
APPROVAL C. Sparling 10/24/65
NASA APPROVAL
MIT APPROVAL 4 Nov 65
10 SEP 65

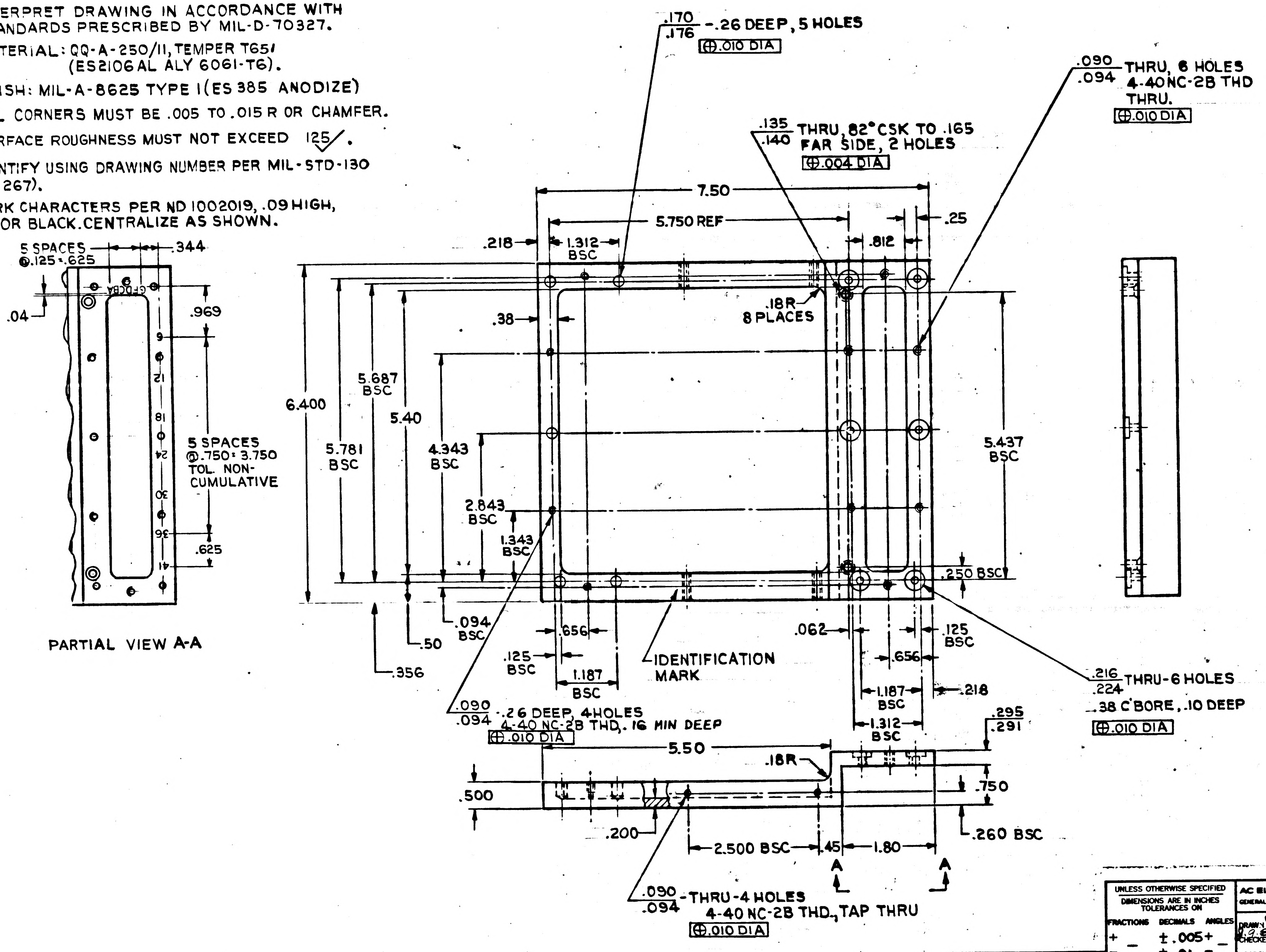
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONNECTOR, PLUG,
ELECTRICAL - 262 PIN

CODE IDENT NO. 99974
SIZE D
6900050
SCALE 1/1
SHEET 1 OF 1

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	REVISED PER DO61267		29 NOV 65	RC
	B	INITIAL RELEASE CLASS A PER TDRR 25332		9 DEC 65	LK JAC

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: QQ-A-250/11, TEMPER T651 (ES2106 AL ALY 6061-T6).
3. FINISH: MIL-A-8625 TYPE I (ES 385 ANODIZE)
4. ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
5. SURFACE ROUGHNESS MUST NOT EXCEED 125/.
6. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES267).
7. MARK CHARACTERS PER ND 1002019, .09 HIGH, COLOR BLACK. CENTRALIZE AS SHOWN.



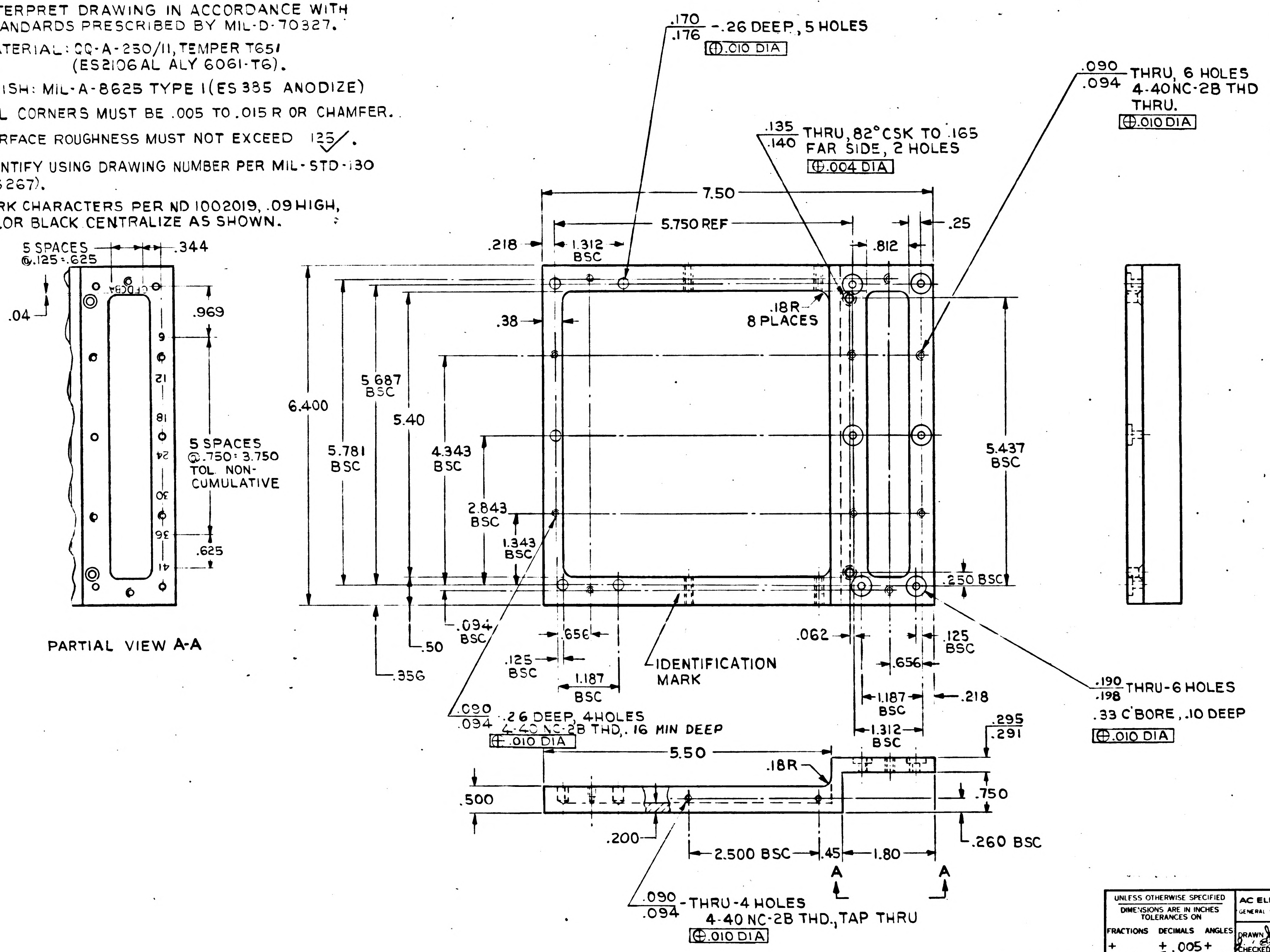
5 SPACES @.125=.625
.344
.04
.969
5 SPACES @.750=3.750 TOL. NON-CUMULATIVE
.625
PARTIAL VIEW A-A
.170 .176 -.26 DEEP, 5 HOLES ⊕.010 DIA
.135 .140 THRU, 82° CSK TO .165 FAR SIDE, 2 HOLES ⊕.004 DIA
.090 .094 THRU, 6 HOLES 4-40NC-2B THD THRU. ⊕.010 DIA
7.50
5.750 REF
.25
.218
1.312 BSC
.812
.18R 8 PLACES
.38
6.400
5.687 BSC
5.40
5.781 BSC
4.343 BSC
2.843 BSC
1.343 BSC
5.437 BSC
.250 BSC
.094 BSC
.50
.356
.656
.125 BSC
1.187 BSC
IDENTIFICATION MARK
.062
.125 BSC
.656
1.187 BSC
.218
1.312 BSC
.216 .224 THRU-6 HOLES .38 C'BORE, .10 DEEP ⊕.010 DIA
.090 .094 .26 DEEP, 4 HOLES 4-40 NC-2B THD, .16 MIN DEEP ⊕.010 DIA
5.50
.18R
.295 .291
.500
.750
.200
2.500 BSC
.45
1.80
.260 BSC
A
A
.090 .094 -THRU-4 HOLES 4-40 NC-2B THD., TAP THRU ⊕.010 DIA

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
FRACTIONS + − DECIMALS ±.005 ±.01 ANGLES + −	DRAWN Jamowski DATE 2 NOV 65 CHECKED J. G. Gysmourz 11 NOV 65 APPROVAL D. Joss 11 NOV 65 APPROVAL 1-13-66	BASE, INTERCONNECTING BOX	
DO NOT SCALE THIS DRAWING	NASA APPROVAL A. C. METZGER	CODE IDENT NO. 99974	SIZE D
MATERIAL SEE NOTE 2	MIT APPROVAL W. Kupfer 18 Jan 66	6900052	
CONTRACT NAS 9-497		SCALE FULL	SHEET 1 OF 1

6900046-011	690043-011
NEXT ASSY	USED ON
APPLICATION	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: QQ-A-250/11, TEMPER T651 (ES2106 AL ALY 6061-T6).
3. FINISH: MIL-A-8625 TYPE I (ES 385 ANODIZE)
4. ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
5. SURFACE ROUGHNESS MUST NOT EXCEED 125✓.
6. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES 267).
7. MARK CHARACTERS PER ND 1002019, .09 HIGH, COLOR BLACK CENTRALIZE AS SHOWN.



.170
.176 -.26 DEEP, 5 HOLES
⊕ .010 DIA
.090
.094 THRU, 6 HOLES
4-40NC-2B THD THRU.
⊕ .010 DIA
.135
.140 THRU, 82° CSK TO .165
FAR SIDE, 2 HOLES
⊕ .004 DIA
7.50
5.750 REF
.25
.218
1.312 BSC
.812
5 SPACES @.125=.625
.344
.04
.969
.18R
8 PLACES
.38
5 SPACES @.750=3.750 TOL NON-CUMULATIVE
.625
6.400
5.687 BSC
5.40
5.781 BSC
4.343 BSC
2.843 BSC
1.343 BSC
5.437 BSC
.250 BSC
.094 BSC
.50
.356
.656
.125 BSC
1.187 BSC
IDENTIFICATION MARK
.062
.125 BSC
.656
1.187 BSC
.218
1.312 BSC
.190
.198 THRU-6 HOLES
.33 C'BORE, .10 DEEP
⊕ .010 DIA
PARTIAL VIEW A-A
.090
.094 .26 DEEP, 4 HOLES
4-40 NC-2B THD, .16 MIN DEEP
⊕ .010 DIA
5.50
.18R
.295
.291
.500
.750
.200
.260 BSC
2.500 BSC
.45
1.80
A
A
.090
.094 -THRU-4 HOLES
4-40 NC-2B THD., TAP THRU
⊕ .010 DIA

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	REVISED PER DO61267		29 NOV 65	RO
	B	INITIAL RELEASE CLASS A PER TDRR 25332		9 DEC 65	LK JAC
	C	REVISED PER TDRR 25404		1 FEB 66	OKD

6900046-01	6900043-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS ±.005 ±.01 ANGLES + − DO NOT SCALE THIS DRAWING	AC ELECTRONICS DIVISION GENERAL MOTORS CORP MILWAUKEE WIS DRAWN Janowiak DATE 2 NOV 65 CHECKED Szymoura 11NOV65 APPROVAL 11 NOV 6 APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS BASE, INTERCONNECTING BOX	
NEXT ASSY	USED ON	MATERIAL SEE NOTE 2	NASA APPROVAL	CODE IDENT NO 99974	SIZE D 6900052
APPLICATION		CONTRACT NAS 9 497	MIT APPROVAL	SCALE FULL	SHEET 1 OF 1

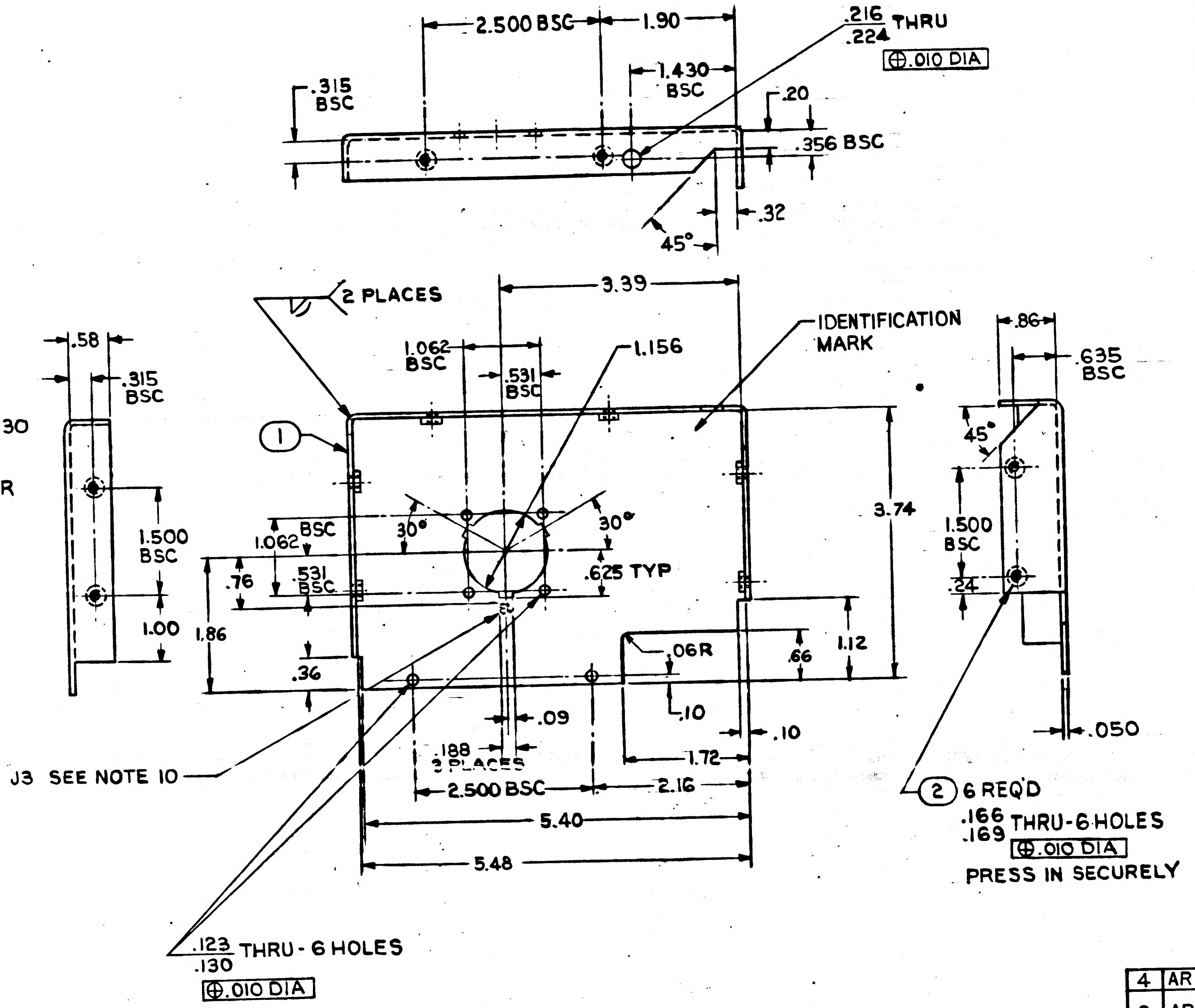
6900052 C

MIL-1062D D

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	REVISED PER DO 61267		29 NOV 65	20
	B	INITIAL RELEASE CLASS A PER TDRR 25332		9 DEC 65	LK JAC

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: QQ-A-250/8, TEMPER H34 (ES 2105 AL ALY 5052-H34).
3. FINISH: APPLY FINISH P513 OF MIL-F-14072 USING ITEM ④ AND TWO COATS OF ITEM ③. PRIMER AND FINISH TO BE APPLIED TO OUTSIDE SURFACES OF COVER ONLY.
4. WELD PER MIL-W-8604.
5. MUST BE FREE FROM BURRS AND SHARP CORNERS.
6. ALL INSIDE BEND RADII .05.
7. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
8. MINIMUM BEND RELIEF PERMISSIBLE WHERE REQUIRED.
9. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES-267).
10. MARK CHARACTERS PER ND 1002019, .09 HIGH, COLOR BLACK, FAR SIDE ONLY. CENTRALIZE AS SHOWN.


2.500 BSC
1.90
.216
.224 THRU
⊕.010 DIA
.315 BSC
1.430 BSC
.20
.356 BSC
45°
.32
2 PLACES
3.39
1.062 BSC
.531 BSC
1.156
IDENTIFICATION MARK
.86
.635 BSC
.58
.315 BSC
①
45°
3.74
30°
30°
1.062 BSC
.531 BSC
.625 TYP
1.500 BSC
1.500 BSC
.76
.24
1.00
1.86
.36
.06R
.66
1.12
.10
.09
.10
.050
J3 SEE NOTE 10
.188 2 PLACES
1.72
2.500 BSC
2.16
② 6 REQ'D
.166
.169 THRU-6 HOLES
⊕.010 DIA
PRESS IN SECURELY
5.40
5.48
.123
.130 THRU - 6 HOLES
⊕.010 DIA

	4	AR	MIL-P-8585	ZINC CHROMATE PRIMER(ES2589)
	3	AR	TT-E-529	SEMI-GLOSS ENAMEL CLASS B, COLOR LIGHT GRAY NO.26440 OF FED-STD-595
SEE NOTE 7	2	6	1006989-6	NUT, PLAIN-SELF CLINCHING
SEE NOTE 2	1	1	6900055-001	COVER, RIGHT SIDE
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6900046-011	6900043-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.01 ANGLES +1° −

DO NOT SCALE THIS DRAWING

MATERIAL SEE NOTE 2

CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN Janowiak DATE 3 NOV 65
CHECKED 11 NOV 65
APPROVAL J. Foss 11 NOV 65
APPROVAL 1-13-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER, RIGHT SIDE, INTERCONNECTING BOX- (INSEPARABLE ASSEMBLY)

CODE IDENT NO. 99974 SIZE D 6900055

SCALE FULL SHEET 1 OF 1

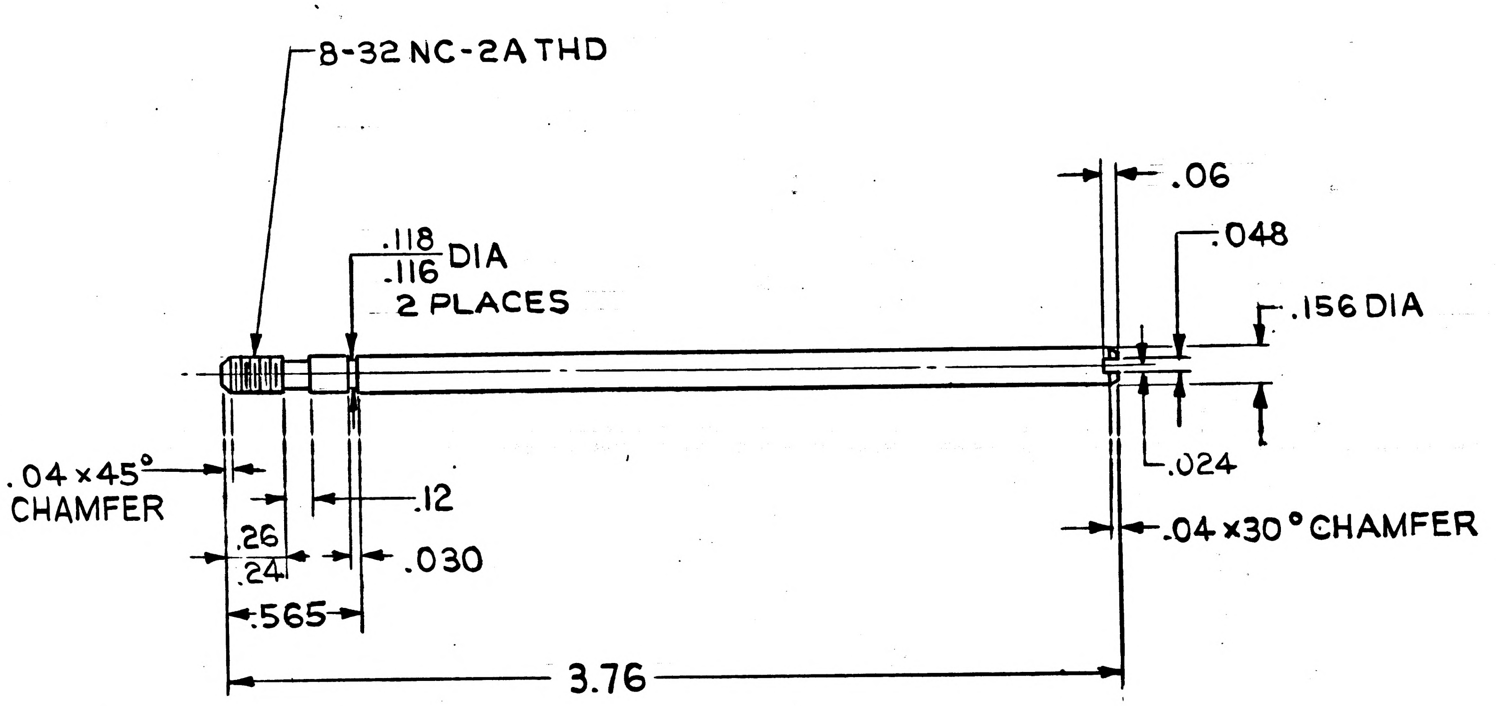
Charleston 11 NOV 65

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

REVISIONS TDRR 25332

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: QQ-S-763 CLASS 303, COND. A, CF (ES380-1 SST).
3. FINISH: MIL-F-14072 (SIG. C) FINE 300 (ES583 PASSIVATE).
4. UNLESS OTHERWISE SPECIFIED: MUST BE FREE FROM BURRS AND SHARP CORNERS.
5. SURFACE ROUGHNESS MUST NOT EXCEED 125✓.
6. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES-267).



6900046-011	6900043-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
± —	±.005 ±.01	± 2°

DO NOT SCALE THIS DRAWING

MATERIAL SEE NOTE 2

CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN Janowiak DATE 5 NOV 65
CHECKED J.G. Bzymouse 11 NOV 65
APPROVAL D. Foss 11 NOV 65
APPROVAL C. Sherman 1-14-66

A. C. METZGER
NASA APPROVAL

MIT APPROVAL 18 Jan 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SCREW, EXTERNALLY
RELIEVED BODY

CODE IDENT NO. 99974
SIZE C
6900058
SCALE 2:1
SHEET 1 OF 1

MIL 1077C—P

Christon 11-11-65

REVISIONS 25332

SYM	DESCRIPTION	DATE	APPROVAL

APPLICATION

NEXT ASSY	USED ON
6900046-011	6900045-011

REV	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37			
REV STATUS REV						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
OF SHEETS SHEET						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN R. Patrick 23 Nov 65
DATE
CHECKED A. Waldsack 24 NOV 65
APPROVAL E. Swenson 24 Nov '65
APPROVAL J. M. Whitten 2-28-65
NASA APPROVAL A. C. METZGER
MIT APPROVAL
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A", SIGNAL CONDITIONER

CODE IDENT NO. 99974
SIZE A
6900064
REV
SCALE —
SHEET 1 OF 37

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
1	NOTE ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	LACE HARNESS USING ITEM 13.
4	GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING. UNLESS OTHERWISE SPECIFIED HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	ASSEMBLE PER ND 1002032. ~~APPLY LEAD IDENTIFICATIONS PER ND1002019.~~
7	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.
8	SERIALIZE PER ND 1002023. ~~ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.~~
9	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
10	IN CIRCUIT POINT FIELD I - INNER CONTACT O - OUTER CONTACT

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
11	TYPICAL INSTALLATION OF CONTACTS A - ASSEMBLE OUTER HYRING OVER BOTH LEADS B - ASSEMBLE INNER SUPPORT SLEEVE, OUTER SUPPORT SLEEVE, AND INNER CONTACT TO INNER LEAD IN ORDER LISTED. CRIMP CONTACT. C - ASSEMBLE OUTER CONTACT TO INNER CONTACT. SLIDE OUTER SLEEVE OVER OUTER CONTACT UNTIL SEATED. LAY OUTER LEAD AGAINST OUTER CONTACT IN OPEN SECTION OF OUTER SLEEVE. D - SLIDE HYRING FORWARD AGAINST SPRING AND CRIMP IN PLACE.
12	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER - W - WHITE
13	ALL WIRES TERMINATING AT CONNECTORS J1 AND J2 ARE TO BE WIRE WRAPPED.
14	SECURE TO CABLE USING ITEM 13.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900064-001	WIRE, 1010807-5, 24AWG, WHT, 260 FT. TOTAL LENGTH
	2	1	1897252-104	CONNECTOR PLUG, ELECTRICAL
	3	1	1897335-001	CONNECTOR PLUG, ELECTRICAL
	4	41	1016369-188	CONTACT, INNER MALE
	5	41	1016369-488	CONTACT, OUTER FEMALE
	6	41	1016369-588	HYRING
	7	41	1016369-711	INNER SUPPORT SLEEVE
	8	41	1016369-713	OUTER SUPPORT SLEEVE
	9	47	1897190- 1	CONTACT, PIN
	10	25	1016369-420	CONTACT, PIN
	11	1	1016006-001	SPLICE REDUCER
	12	1	1010490-228	INSULATION SLEEVING, ELECTRICAL
	13	AR	MIL-T-713	LACING TAPE, TYPE P WAXED, CLASS 2, BLACK ~~(ES2732)~~ (ES2732-1, SIZE 18)
	14	1	6900056	CONNECTOR PLUG ELECTRICAL ASSEMBLY
	15	1	6900057	CONNECTOR PLUG ELECTRICAL ASSEMBLY
	16	1	1016128-011	BAND, IDENTIFICATION

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1	J2-F25 J3-38					.81 .15	NO NO		9	
A	2	1	J2-G25 J3-37					.81 .15	NO NO		9	
A	3	1	J2-F26 J3-40					.81 .15	NO NO		9	
A	4	1	J2-G26 J3-39					.81 .15	NO NO		9	
A	5	1	J2-F27 J3-42					.81 .15	NO NO		9	
A	6	1	J2-G27 J3-41					.81 .15	NO NO		9	
A	7	1	J2-G37 J3-46					.81 .15	NO NO		9	
A	8	1	J2-G38 J3-47					.81 .15	NO NO		9	
A	9	1	J2-G39 J3-48					.81 .15	NO NO		9	
A	10	1	J2-G36 J3-49					.81 .15	NO NO		9	
A	11	1	J2-A24 J3-1					.81 .15	NO NO		9	
A	12	1	J2-B24 J3-2					.81 .15	NO NO		9	

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 5 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	13	1	J2-C24 J3-3					.81 .15	NO NO		9	
A	14	1	J2-D24 J3-4					.81 .15	NO NO		9	
A	15	1	J2-F24 J3-5					.81 .15	NO NO		9	
A	16	1	J2-G24 J3-6					.81 .15	NO NO		9	
A	17	1	J2-C18 J3-7					.81 .15	NO NO		9	
A	18	1	J2-C17 J3-8					.81 .15	NO NO		9	
A	19	1	J2-D18 E1-BB					.81 .38	NO NO			
A	20	1	E1-BB J3-9					.38 .15	NO NO		9	
A	21	1	E1-B J3-66					.38 .15	NO NO		9	
A	22	1	E1-B J3-68					.38 .15	NO NO		9	
A	23	1	E1-B J3-70					.38 .15	NO NO		9	
A	24	1	J2-C31 J3-67					.81 .15	NO NO		9	

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 6 OF 37

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	25	1	J2-F31 J3-69					.81 .15	NO NO		9	
A	26	1	J2-A14 J3-11					.81 .15	NO NO		9	
A	27	1	J2-B14 J3-12					.81 .15	NO NO		9	
A	28	1	J2-C14 J3-13					.81 .15	NO NO		9	
A	29	1	J2-D14 J3-14					.81 .15	NO NO		9	
A	30	1	J2-A31 J3-65					.81 .15	NO NO		9	
A	31	1	J2-A17 J3-29					.81 .15	NO NO		9	
A	32	1	J2-A18 J3-30					.81 .15	NO NO		9	
A	33	1	J2-A15 J3-31					.81 .15	NO NO		9	
A	34	1	J2-A16 J3-32					.81 .15	NO NO		9	
A	35	1	J2-G15 J3-34					.81 .15	NO NO		9	
A	36	1	J2-G16 J3-35					.81 .15	NO NO		9	

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 7 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	37	1	J1-A17 J2-A17					.81 .81	NO NO			
A	38	1	J1-A18 J2-A18					.81 .81	NO NO			
A	39	1	J1-A24 J2-A24					.81 .81	NO NO			
A	40	1	J1-A25 J2-A25					.81 .81	NO NO			
A	41	1	J1-A26 J2-A26					.81 .81	NO NO			
A	42	1	J1-A27 J2-A27					.81 .81	NO NO			
A	43	1	J1-A28 J2-A28					.81 .81	NO NO			
A	44	1	J1-A29 J2-A29					.81 .81	NO NO			
A	45	1	J1-A30 J2-A30					.81 .81	NO NO			
A	46	1	J1-A31 J2-A31					.81 .81	NO NO			
A	47	1	J1-A32 J2-A32					.81 .81	NO NO			
A	48	1	J1-A33 J2-A33					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 8 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		J1-A34 J2-A34					.81 .81	NO NO			
A 50	1		J1-A35 J2-A35					.81 .81	NO NO			
A 51	1		J1-A3 J2-A3					.81 .81	NO NO			
A 52	1		J1-A4 J2-A4					.81 .81	NO NO			
A 53	1		J1-A5 J2-A5					.81 .81	NO NO			
A 54	1		J1-A6 J2-A6					.81 .81	NO NO			
A 55	1		J1-A7 J2-A7					.81 .81	NO NO			
A 56	1		J1-A8 J2-A8					.81 .81	NO NO			
A 57	1		J1-A9 J2-A9					.81 .81	NO NO			
A 58	1		J1-A10 J2-A10					.81 .81	NO NO			
A 59	1		J1-A11 J2-A11					.81 .81	NO NO			
A 60	1		J1-A12 J2-A12					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 9 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		J1-A13 J2-A13					.81 .81	NO NO			
A 62	1		J1-A14 J2-A14					.81 .81	NO NO			
A 63	1		J1-A15 J2-A15					.81 .81	NO NO			
A 64	1		J1-A16 J2-A16					.81 .81	NO NO			
A 65	1		J1-A36 J2-A36					.81 .81	NO NO			
A 66	1		J1-A37 J2-A37					.81 .81	NO NO			
A 67	1		J1-A38 J2-A38					.81 .81	NO NO			
A 68	1		J1-A39 J2-A39					.81 .81	NO NO			
A 69	1		J1-B1 J2-B1					.81 .81	NO NO			
A 70	1		J1-B2 J2-B2					.81 .81	NO NO			
A 71	1		J1-B3 J2-B3					.81 .81	NO NO			
A 72	1		J1-B4 J2-B4					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 10 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		J1-B5 J2-B5					.81 .81	NO NO			
A 74	1		J1-B6 J2-B6					.81 .81	NO NO			
A 75	1		J1-B7 J2-B7					.81 .81	NO NO			
A 76	1		J1-B8 J2-B8					.81 .81	NO NO			
A 77	1		J1-B9 J2-B9					.81 .81	NO NO			
A 78	1		J1-B10 J2-B10					.81 .81	NO NO			
A 79	1		J1-B11 J2-B11					.81 .81	NO NO			
A 80	1		J1-B12 J2-B12					.81 .81	NO NO			
A 81	1		J1-B13 J2-B13					.81 .81	NO NO			
A 82	1		J1-B14 J2-B14					.81 .81	NO NO			
A 83	1		J1-B15 J2-B15					.81 .81	NO NO			
A 84	1		J1-B16 J2-B16					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 11 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 85	1		J1-B17 J2-B17					.81 .81	NO NO			
A 86	1		J1-B18 J2-B18					.81 .81	NO NO			
A 87	1		J1-B19 J3-23					.81 .15	NO NO		 9	
A 88	1		J1-B20 J3-24					.81 .15	NO NO		 9	
A 89	1		J1-B21 J2-B21					.15 .15	NO NO			
A 90	1		J1-B22 J2-B22					.15 .15	NO NO			
A 91	1		J1-B23 J2-B23					.15 .15	NO NO			
A 92	1		J1-B24 J2-B24					.15 .15	NO NO			
A 93	1		J1-B25 J2-B25					.81 .81	NO NO			
A 94	1		J1-B26 J2-B26					.81 .81	NO NO			
A 95	1		J1-B27 J2-B27					.81 .81	NO NO			
A 96	1		J1-B28 J2-B28					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR +	SHEET 12 OF 37

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97	1		J1-B29 J2-B29					.81 .81	NO NO			
A 98	1		J1-B30 J2-B30					.81 .81	NO NO			
A 99	1		J1-B31 J2-B31					.81 .81	NO NO			
A 100	1		J1-B32 J2-B32					.81 .81	NO NO			
A 101	1		J1-B33 J2-B33					.81 .81	NO NO			
A 102	1		J1-B34 J2-B34					.81 .81	NO NO			
A 103	1		J1-B35 J2-B35					.81 .81	NO NO			
A 104	1		J1-B36 J2-B36					.81 .81	NO NO			
A 105	1		J1-B37 J2-B37					.81 .81	NO NO			
A 106	1		J1-B38 J2-B38					.81 .81	NO NO			
A 107	1		J1-B39 J2-B39					.81 .81	NO NO			
A 108	1		J1-B40 J2-B40					.81 .81	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900064
SCALE-NONE | REV LTR | SHEET 13 OF 37

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	1		J1-B41 J2-B41					.81 .81	NO NO			
A 110	1		J1-C1 J2-C1					.81 .81	NO NO			
A 111	1		J1-C2 J2-C2					.81 .81	NO NO			
A 112	1		J1-C3 J2-C3					.81 .81	NO NO			
A 113	1		J1-C4 J2-C4					.81 .81	NO NO			
A 114	1		J1-C5 J2-C5					.81 .81	NO NO			
A 115	1		J1-C6 J2-C6					.81 .81	NO NO			
A 116	1		J1-C7 J2-C7					.81 .81	NO NO			
A 117	1		J1-C8 J2-C8					.81 .81	NO NO			
A 118	1		J1-C9 J2-C9					.81 .81	NO NO			
A 119	1		J1-C10 J2-C10					.81 .81	NO NO			
A 120	1		J1-C11 J2-C11					.81 .81	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900064
SCALE-NONE | REV LTR | SHEET 14 OF 37

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 121	1		J1-C12 J2-C12					.81 .81	NO NO			
A 122	1		J1-C13 J2-C13					.81 .81	NO NO			
A 123	1		J1-C14 J2-C14					.81 .81	NO NO			
A 124	1		J1-C15 J2-C15					.81 .81	NO NO			
A 125	1		J1-C16 J2-C16					.81 .81	NO NO			
A 126	1		J1-C17 J2-C17					.81 .81	NO NO			
A 127	1		J1-C18 J2-C18					.81 .81	NO NO			
A 128	1		J1-C19 J3-25					.81 .15	NO NO		 9	
A 129	1		J1-C20 J3-26					.81 .15	NO NO		 9	
A 130	1		J1-C21 J2-C21					.15 .15	NO NO			
A 131	1		J1-C22 J2-C22					.15 .15	NO NO			
A 132	1		J1-C23 J2-C23					.15 .15	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900064
SCALE-NONE | REV LTR | SHEET 15 OF 37

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 133	1		J1-C24 J2-C24					.15 .15	NO NO			
A 134	1		J1-C25 J2-C25					.15 .15	NO NO			
A 135	1		J1-C26 J2-C26					.81 .81	NO NO			
A 136	1		J1-C27 J2-C27					.81 .81	NO NO			
A 137	1		J1-C28 J2-C28					.81 .81	NO NO			
A 138	1		J1-C29 J2-C29					.81 .81	NO NO			
A 139	1		J1-C30 J2-C30					.81 .81	NO NO			
A 140	1		J1-C31 J2-C31					.81 .81	NO NO			
A 141	1		J1-C32 J2-C32					.81 .81	NO NO			
A 142	1		J1-C33 J2-C33					.81 .81	NO NO			
A 143	1		J1-C34 J2-C34					.81 .81	NO NO			
A 144	1		J1-C35 J2-C35					.81 .81	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900064
SCALE-NONE | REV LTR | SHEET 16 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 145	1		J1-C36 J2-C36					.81 .81	NO NO			
A 146	1		J1-C37 J2-C37					.81 .81	NO NO			
A 147	1		J1-C38 J2-C38					.81 .81	NO NO			
A 148	1		J1-C39 J2-C39					.81 .81	NO NO			
A 149	1		J1-C40 J2-C40					.81 .81	NO NO			
A 150	1		J1-C41 J2-C41					.81 .81	NO NO			
A 151	1		J1-D1 J2-D1					.81 .81	NO NO			
A 152	1		J1-D2 J2-D2					.81 .81	NO NO			
A 153	1		J1-D3 J2-D3					.81 .81	NO NO			
A 154	1		J1-D4 J2-D4					.81 .81	NO NO			
A 155	1		J1-D5 J2-D5					.81 .81	NO NO			
A 156	1		J1-D6 J2-D6					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR	SHEET 17 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 157	1		J1-D7 J2-D7					.81 .81	NO NO			
A 158	1		J1-D8 J2-D8					.81 .81	NO NO			
A 159	1		J1-D9 J2-D9					.81 .81	NO NO			
A 160	1		J1-D10 J2-D10					.81 .81	NO NO			
A 161	1		J1-D11 J2-D11					.81 .81	NO NO			
A 162	1		J1-D12 J2-D12					.81 .81	NO NO			
A 163	1		J1-D13 J2-D13					.81 .81	NO NO			
A 164	1		J1-D14 J2-D14					.81 .81	NO NO			
A 165	1		J1-D15 J2-D15					.81 .81	NO NO			
A 166	1		J1-D16 J2-D16					.81 .81	NO NO			
A 167	1		J1-D17 J2-D17					.81 .81	NO NO			
A 168	1		J1-D18 J2-D18					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR	SHEET 18 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 169	1		J1-D19 J2-D19					.81 .81	NO NO			
A 170	1		J1-D20 J2-D20					.81 .81	NO NO			
A 171	1		J1-D21 J2-D21					.81 .81	NO NO			
A 172	1		J1-D22 J2-D22					.81 .81	NO NO			
A 173	1		J1-D23 J2-D23					.81 .81	NO NO			
A 174	1		J1-D24 J2-D24					.81 .81	NO NO			
A 175	1		J1-D25 J2-D25					.81 .81	NO NO			
A 176	1		J1-D26 J2-D26					.81 .81	NO NO			
A 177	1		J1-D27 J2-D27					.81 .81	NO NO			
A 178	1		J1-D28 J2-D28					.81 .81	NO NO			
A 179	1		J1-D29 J2-D29					.81 .81	NO NO			
A 180	1		J1-D30 J2-D30					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR	SHEET 19 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 181	1		J1-D31 J2-D31					.81 .81	NO NO			
A 182	1		J1-D32 J2-D32					.81 .81	NO NO			
A 183	1		J1-D33 J2-D33					.81 .81	NO NO			
A 184	1		J1-D34 J2-D34					.81 .81	NO NO			
A 185	1		J1-D35 J2-D35					.81 .81	NO NO			
A 186	1		J1-D36 J2-D36					.81 .81	NO NO			
A 187	1		J1-D37 J2-D37					.81 .81	NO NO			
A 188	1		J1-D38 J2-D38					.81 .81	NO NO			
A 189	1		J1-D39 J2-D39					.81 .81	NO NO			
A 190	1		J1-D40 J2-D40					.81 .81	NO NO			
A 191	1		J1-D41 J2-D41					.81 .81	NO NO			
A 192	1		J1-F1 J2-F1					.81 .81	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900064
SCALE-NONE	REV LTR	SHEET 20 OF 37

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 193	1		J1-F2 J2-F2					.81 .81	NO NO			
A 194	1		J1-F3 J2-F3					.81 .81	NO NO			
A 195	1		J1-F4 J2-F4					.81 .81	NO NO			
A 196	1		J1-F5 J2-F5					.81 .81	NO NO			
A 197	1		J1-F6 J2-F6					.81 .81	NO NO			
A 198	1		J1-F7 J2-F7					.81 .81	NO NO			
A 199	1		J1-F8 J2-F8					.81 .81	NO NO			
A 200	1		J1-F9 J2-F9					.81 .81	NO NO			
A 201	1		J1-F10 J2-F10					.81 .81	NO NO			
A 202	1		J1-F11 J2-F11					.81 .81	NO NO			
A 203	1		J1-F12 J2-F12					.81 .81	NO NO			
A 204	1		J1-F13 J2-F13					.81 .81	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR		SHEET 21 OF 37

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 205	1		J1-F14 J3-27					.81 .15	NO NO		 9	
A 206	1		J1-F15 J2-F15					.81 .81	NO NO			
A 207	1		J1-F16 J2-F16					.81 .81	NO NO			
A 208	1		J1-F17 J2-F17					.81 .81	NO NO			
A 209	1		J1-F18 J2-F18					.81 .81	NO NO			
A 210	1		J1-F19 J2-F19					.81 .81	NO NO			
A 211	1		J1-F20 J2-F20					.81 .81	NO NO			
A 212	1		J1-F21 J2-F21					.81 .81	NO NO			
A 213	1		J1-F22 J2-F22					.81 .81	NO NO			
A 214	1		J1-F23 J2-F23					.81 .81	NO NO			
A 215	1		J1-F24 J2-F24					.81 .81	NO NO			
A 216	1		J1-F25 J2-F25					.81 .81	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR		SHEET 22 OF 37

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 217	1		J1-F26 J2-F26					.81 .81	NO NO			
A 218	1		J1-F27 J2-F27					.81 .81	NO NO			
A 219	1		J1-F28 J2-F28					.81 .81	NO NO			
A 220	1		J1-F29 J2-F29					.81 .81	NO NO			
A 221	1		J1-F30 J2-F30					.81 .81	NO NO			
A 222	1		J1-F31 J2-F31					.81 .81	NO NO			
A 223	1		J1-F32 J2-F32					.81 .81	NO NO			
A 224	1		J1-F33 J2-F33					.81 .81	NO NO			
A 225	1		J1-F34 J2-F34					.81 .81	NO NO			
A 226	1		J1-F35 J2-F35					.81 .81	NO NO			
A 227	1		J1-F36 J2-F36					.81 .81	NO NO			
A 228	1		J1-F37 J2-F37					.81 .81	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR		SHEET 23 OF 37

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 229	1		J1-F38 J2-F38					.81 .81	NO NO			
A 230	1		J1-F39 J2-F39					.81 .81	NO NO			
A 231	1		J1-F40 J2-F40					.81 .81	NO NO			
A 232	1		J1-F41 J2-F41					.81 .81	NO NO			
A 233	1		J1-G3 J2-G3					.81 .81	NO NO			
A 234	1		J1-G4 J2-G4					.81 .81	NO NO			
A 235	1		J1-G5 J2-G5					.81 .81	NO NO			
A 236	1		J1-G6 J2-G6					.81 .81	NO NO			
A 237	1		J1-G7 J2-G7					.81 .81	NO NO			
A 238	1		J1-G8 J2-G8					.81 .81	NO NO			
A 239	1		J1-G9 J2-G9					.81 .81	NO NO			
A 240	1		J1-G10 J2-G10					.81 .81	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR		SHEET 24 OF 37

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 241	1		J1-G11 J2-G11					.81 .81	NO NO			
A 242	1		J1-G12 J2-G12					.81 .81	NO NO			
A 243	1		J1-G13 J2-G13					.81 .81	NO NO			
A 244	1		J1-G14 J2-G14					.81 .81	NO NO			
A 245	1		J1-G15 J2-G15					.81 .81	NO NO			
A 246	1		J1-G16 J2-G16					.81 .81	NO NO			
A 247	1		J1-G17 J2-G17					.81 .81	NO NO			
A 248	1		J1-G18 J2-G18					.81 .81	NO NO			
A 249	1		J1-G24 J2-G24					.81 .81	NO NO			
A 250	1		J1-G25 J2-G25					.81 .81	NO NO			
A 251	1		J1-G26 J2-G26					.81 .81	NO NO			
A 252	1		J1-G27 J2-G27					.81 .81	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR +		SHEET 25 OF 37

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 253	1		J1-G28 J2-G28					.81 .81	NO NO			
A 254	1		J1-G29 J2-G29					.81 .81	NO NO			
A 255	1		J1-G30 J2-G30					.81 .81	NO NO			
A 256	1		J1-G31 J2-G31					.81 .81	NO NO			
A 257	1		J1-G32 J2-G32					.81 .81	NO NO			
A 258	1		J1-G33 J2-G33					.81 .81	NO NO			
A 259	1		J1-G34 J2-G34					.81 .81	NO NO			
A 260	1		J1-G35 J2-G35					.81 .81	NO NO			
A 261	1		J1-G36 J2-G36					.81 .81	NO NO			
A 262	1		J1-G37 J2-G37					.81 .81	NO NO			
A 263	1		J1-G38 J2-G38					.81 .81	NO NO			
A 264	1		J1-G39 J2-G39					.81 .81	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR +		SHEET 26 OF 37

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 265	1		J2-G33 J4-A4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-A4/O
A 266	1		J2-F33 J4-A4/O					.81 .23	NO NO		6, 5	USE WITH J4-A4/I
A 267	1		J2-F34 J4-B4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-B4/O
A 268	1		J2-G34 J4-B4/O					.81 .23	NO NO		6, 5	USE WITH J4-B4/I
A 269	1		J2-B33 J4-C4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-C4/O
A 270	1		J2-A33 J4-C4/O					.81 .23	NO NO		6, 5	USE WITH J4-C4/I
A 271	1		J2-C33 J4-D4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-D4/O
A 272	1		J2-D33 J4-D4/O					.81 .23	NO NO		6, 5	USE WITH J4-D4/I
A 273	1		J2-B34 J4-E4					.81 .18	NO NO		10	
A 274	1		J2-C34 J4-F4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-F4/O
A 275	1		J2-D34 J4-F4/O					.81 .23	NO NO		6, 5	USE WITH J4-F4/I
A 276	1		J2-D17 J4-G4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-G4/O

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR +		SHEET 27 OF 37

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 277	1		J2-D18 J4-G4/O					.81 .23	NO NO		6, 5	USE WITH J4-G4/I
A 278	1		J2-F17 J4-H4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-H4/O
A 279	1		J2-F18 J4-H4/O					.81 .23	NO NO		6, 5	USE WITH J4-H4/I
A 280	1		J2-G18 J4-J4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-J4/O
A 281	1		J2-G17 J4-J4/O					.81 .23	NO NO		6, 5	USE WITH J4-J4/I
A 282	1		J2-A34 J4-N4					.81 .18	NO NO		10	
A 283	1		J2-G31 J4-P4					.81 .18	NO NO		10	
A 284	1		J2-D31 J4-R4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-R4/O
A 285	1		J2-B31 J4-R4/O					.81 .23	NO NO		6, 5	USE WITH J4-R4/I
A 286	1		J2-A36 J4-S4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-S4/O
A 287	1		J2-B37 J4-S4/O					.81 .23	NO NO		6, 5	USE WITH J4-S4/I
A 288	1		J2-A37 J4-T4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-T4/O

SIZE	CODE IDENT NO.		
A	99974	6900064	
SCALE-NONE	REV LTR +		SHEET 28 OF 37

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 289	1		J2-B36 J4-T4/O					.81 .23	NO NO		6, 5	USE WITH J4-T4/I
A 290	1		J2-C17 J4-U4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-U4/O
A 291	1		J2-C18 J4-U4/O					.81 .23	NO NO		6, 5	USE WITH J4-U4/I
A 292	1		J2-D37 J4-V4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-V4/O
A 293	1		J2-F37 J4-V4/O					.81 .23	NO NO		6, 5	USE WITH J4-V4/I
A 294	1		J2-C37 J4-W4					.81 .18	NO NO		10	
A 295	1		J2-D38 J4-X4/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-X4/O
A 296	1		J2-F38 J4-X4/O					.81 .23	NO NO		6, 5	USE WITH J4-X4/I
A 297	1		J2-C38 J4-X5					.81 .18	NO NO		10	
A 298	1		J2-D39 J4-W5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-W5/O
A 299	1		J2-F39 J4-W5/O					.81 .23	NO NO		6, 5	USE WITH J4-W5/I
A 300	1		J2-C39 J4-V5					.81 .18	NO NO		10	

SIZE A
CODE IDENT NO. 99974
6900064
SCALE-NONE
REV LTR +
SHEET 29 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 301	1		J2-D40 J4-U5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-U5/O
A 302	1		J2-F40 J4-U5/O					.81 .23	NO NO		6, 5	USE WITH J4-U5/I
A 303	1		J2-C40 J4-T5					.81 .18	NO NO		10	
A 304	1		J2-D41 J4-S5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-S5/O
A 305	1		J2-F41 J4-S5/O					.81 .23	NO NO		6, 5	USE WITH J4-S5/I
A 306	1		J2-C41 J4-R5					.81 .18	NO NO		10	
A 307	1		J2-B21 J4-P5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-P5/O
A 308	1		J2-B22 J4-P5/O					.81 .23	NO NO		6, 5	USE WITH J4-P5/I
A 309	1		J2-B23 J4-N5					.81 .18	NO NO		10	
A 310	1		J2-D21 J4-J5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-J5/O
A 311	1		J2-D22 ~~J4-J501~~ J4- J5/O					.81 .23	NO NO		6, 5	USE WITH J4-J5/I
A 312	1		J2-D23 J4-H5					.81 .18	NO NO		10	

SIZE A
CODE IDENT NO. 99974
6900064
SCALE-NONE
REV LTR +
SHEET 30 OF 37

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 313	1		J2-F21 J4-G5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-G5/O
A 314	1		J2-F22 J4-G5/O					.81 .23	NO NO		6, 5	USE WITH J4-G5/I
A 315	1		J2-F23 J4-F5					.81 .18	NO NO		10	
A 316	1		J2-C21 J4-E5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-E5/O
A 317	1		J2-C22 J4-E5/O					.81 .23	NO NO		6, 5	USE WITH J4-E5/I
A 318	1		J2-C23 J4-D5					.81 .18	NO NO		10	
A 319	1		J2-A28 J4-C5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-C5/O
A 320	1		J2-A29 J4-C5/O					.81 .23	NO NO		6, 5	USE WITH J4-C5/I
A 321	1		J2-A30 J4-B5					.81 .18	NO NO		10	
A 322	1		J2-B28 J4-A5/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-A5/O
A 323	1		J2-B29 J4-A5/O					.81 .23	NO NO		6, 5	USE WITH J4-A5/I
A 324	1		J2-B30 J4-A6					.81 .18	NO NO		10	

SIZE A
CODE IDENT NO. 99974
6900064
SCALE-NONE
REV LTR +
SHEET 31 OF

MIL 2084 9-65

WIRING HARNESS A 6900064 +

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 325	1		J2-C28 J4-B6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-B6/O
A 326	1		J2-C29 J4-B6/O					.81 .23	NO NO		6, 5	USE WITH J4-B6/I
A 327	1		J2-C30 J4-C6					.81 .18	NO NO		10	
A 328	1		J2-D28 J4-D6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-D6/O
A 329	1		J2-D29 J4-D6/O					.81 .23	NO NO		6, 5	USE WITH J4-D6/I
A 330	1		J2-D30 J4-E6					.81 .18	NO NO		10	
A 331	1		J2-F28 J4-F6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-F6/O
A 332	1		J2-F29 J4-F6/O					.81 .23	NO NO		6, 5	USE WITH J4-F6/I
A 333	1		J2-F30 J4-G6					.81 .18	NO NO		10	
A 334	1		J2-G28 J4-H6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-H6/O
A 335	1		J2-G29 J4-H6/O					.81 .23	NO NO		6, 5	USE WITH J4-H6/I
A 336	1		J2-G30 J4-J6					.81 .18	NO NO		10	

SIZE A
CODE IDENT NO. 99974
6900064
SCALE-NONE
REV LTR +
SHEET 32 OF

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 337	1		J2-D19 J4-K6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-K6/O
A 338	1		J2-D20 J4-K6/O					.81 .23	NO NO		6, 5	USE WITH J4-K6/I
A 339	1		J2-F19 J4-B2/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-B2/O
A 340	1		J2-F20 J4-B2/O					.81 .23	NO NO		6, 5	USE WITH J4-B2/I
A 341	1		J2-C15 J4-M6					.81 .18	NO NO		10	
A 342	1		J2-C16 J4-N6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-N6/O
A 343	1		J2-D15 J4-N6/O					.81 .23	NO NO		6, 5	USE WITH J4-N6/I
A 344	1		J2-D35 J4-P6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-P6/O
A 345	1		J2-F35 J4-P6/O					.81 .23	NO NO		6, 5	USE WITH J4-P6/I
A 346	1		J2-D36 J4-R6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-R6-/O
A 347	1		J2-F36 J4-R6/O					.81 .23	NO NO		6, 5	USE WITH J4-R6/I
A 348	1		J2-B16 J4-S6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-S6/O

SIZE A	CODE IDENT NO. 99974	6900064	
SCALE-NONE	REV LTR	+	SHEET 33 OF

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 349	1		J2-B15 J4-S6/O					.81 .23	NO NO		6, 5	USE WITH J4-S6/I
A 350	1		J2-B17 J4-T6					.81 .18	NO NO		10	
A 351	1		J2-F32 J4-U6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-U6/O
A 352	1		J2-G32 J4-U6/O					.81 .23	NO NO		6, 5	USE WITH J4-U6/I
A 353	1		J2-A32 J4-V6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-V6/O
A 354	1		J2-B32 J4-V6/O					.81 .23	NO NO		6, 5	USE WITH J4-V6/I
A 355	1		J2-F15 J4-W6/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-W6/O
A 356	1		J2-F16 J4-W6/O					.81 .23	NO NO		6, 5	USE WITH J4-W6/I
A 357	1		J2-D16 J4-X6					.81 .18	NO NO		10	
A 358	1		J2-C32 J4-A3/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-A3/O
A 360	1		J2-C26 J4-B3/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-B3/O
A 361	1		J2-C25 J4-B3/O					.81 .23	NO NO		6, 5	USE WITH J4-B3/I

SIZE A	CODE IDENT NO. 99974	6900064	
SCALE-NONE	REV LTR	+	SHEET 34 OF

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 362			J2-C27 J4-C3					.81 .18	NO NO		10	
A 363			J2-D26 J4-D3/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-D3/O
A 364			J2-D25 J4-D3/O					.81 .23	NO NO		6, 5	USE WITH J4-D3/I
A 365			J2-D27 J4-E3					.81 .18	NO NO		10	
A 366			J2-A26 J4-F3/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-F3/O
A 367			J2-A25 J4-F3/O					.81 .23	NO NO		6, 5	USE WITH J4-F3/I
A 368			J2-A27 J4-G3					.81 .18	NO NO		10	
A 369			J2-B26 J4-H3/I					.81 .22	NO NO		7, 8, 4	USE WITH J4-H3/O
A 370			J2-B25 J4-H3/O					.81 .23	NO NO		6, 5	USE WITH J4-H3/I
A 371			J2-B27 J4-J3					.81 .18	NO NO		10	
A 372			J3-80 J2-B19					.15 .81	NO NO		9	
A 373			J3-81 J2-B20					.15 .81	NO NO		9	

SIZE A	CODE IDENT NO. 99974	6900064	
SCALE-NONE	REV LTR	+	SHEET 35 OF

MIL 2084 9-65

WIRING HARNESS A 6900064

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 374			J3-82 J2-C19					.15 .81	NO NO		9	
A 375			J3-83 J2-C20					.15 .81	NO NO		9	
A 376			J3-84 J2-F14					.15 .81	NO NO		9	
A 359			J2-D32 J4-A3/O					.81 .23	NO NO		6, 5,	USE WITH J4-A3/I

SIZE A	CODE IDENT NO. 99974	6900064	
SCALE-NONE	REV LTR	+	SHEET 36 OF 37

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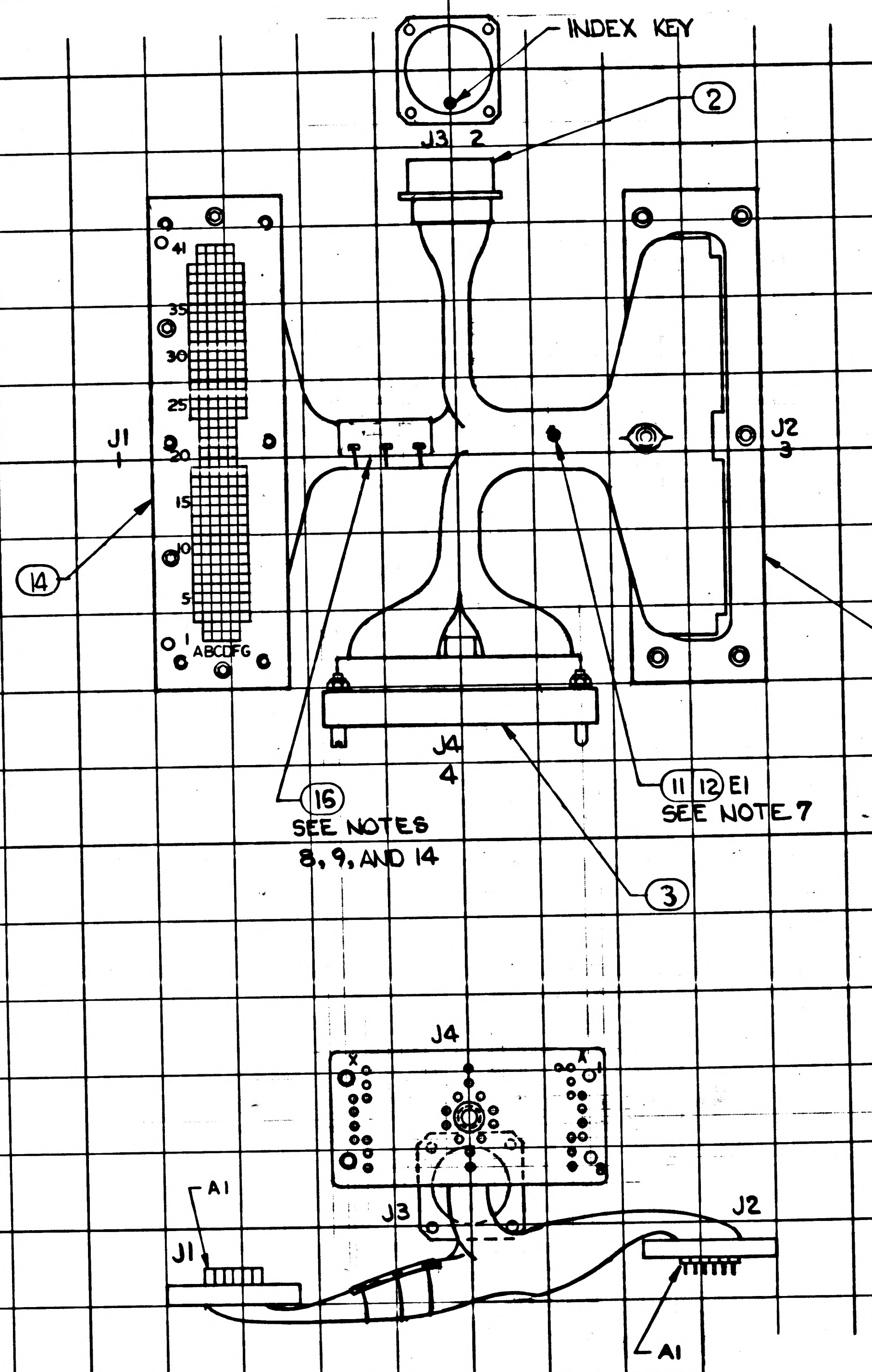
REVISIONS TDRR 25332

SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO		

SEE SHEET 1 FOR REVISION RECORD



INDEX KEY
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41
35
30
25
20
15
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5
1
ABCDFG
J1
1
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J2
3
⑮
J4
4
⑯
SEE NOTES
8, 9, AND 14
⑪ ⑫ E1
SEE NOTE 7
③
J4
X
X
A1
J1
J3
J2
A1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

NEXT ASSY | USED ON
APPLICATION

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN R. Satick DATE 23 NOV 65
CHECKED P. Ukrnich 24 NOV 65
APPROVAL E. Swanson 24 Nov 65
APPROVAL J. M. Watson 12-30-65
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS-"A"
SIGNAL CONDITIONER

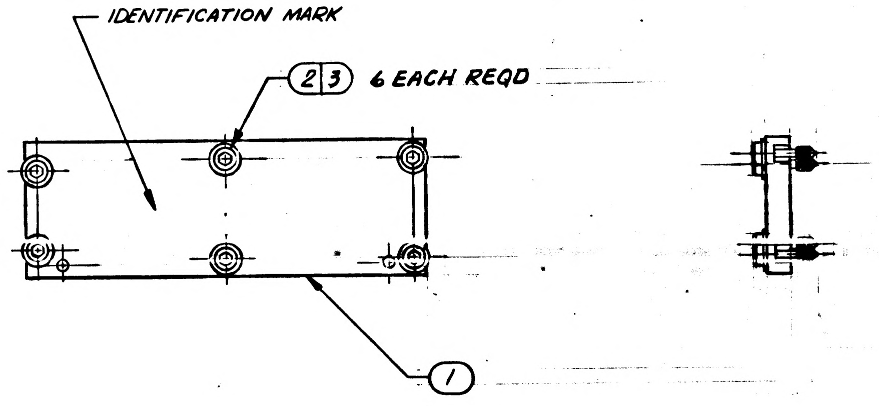
CODE IDENT NO. 99974
SIZE D
6900064
SCALE FULL
SHEET 37 OF 37

8900069

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER DO 61362	—	16 DEC 65	
B		INITIAL RELEASE CLASS A PER TDRR 25864		3 JAN 66	JTK

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES 267).



QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
6		3	AN 960-C8	(1897006-028) WASHER FLAT
6		2	6900071	SCREW, CAP, SOCKET HD, CAPTIVE
1		1	6900065	COVER, HEADER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900001-011	6900001-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN 8 DEC 65 DATE
CHECKED J. Stelova 8 DEC 65
APPROVAL 9 DEC 65
APPROVAL 4/1/66
NASA APPROVAL A. G. METZGER
MIT APPROVAL 1 Feb 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER ASSY, HEADER-PTA

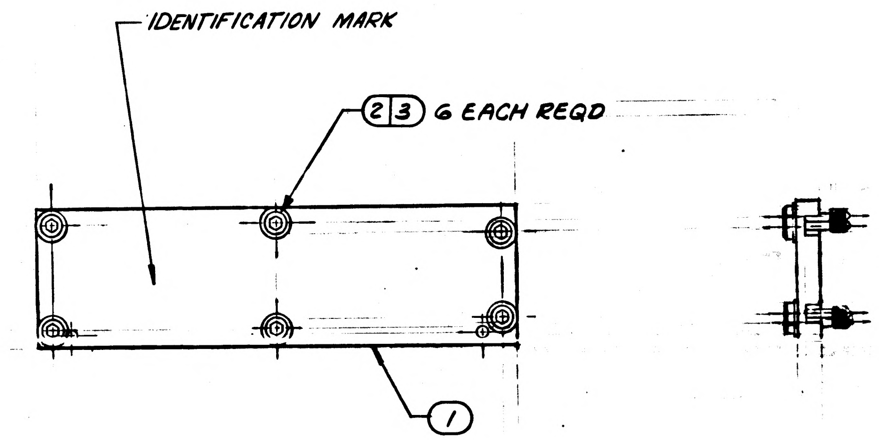
CODE IDENT NO. 99974
SIZE D
6900068
SCALE FULL
SHEET 1 OF 1

B 6900069 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER DO 61362		16 DEC 65	
B		INITIAL RELEASE CLASS A PER TDRR 25604		3 JAN 66	JHK

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES 267)



QUANTITY REQUIRED							LIST OF PARTS AND MATERIALS	
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	
			6		3	AN960-C8	(1897006-028) WASHER, FLAT	
			6		2	6900071	SCREW, CAP, SOCKET HD CAPTIVE	
			1		1	6900066	COVER, HEADER	

APPLICATION		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900001-011	6900001-011	

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN [illegible] DATE 3 DEC 65
CHECKED [illegible] 8 DEC 65
APPROVAL [illegible] 9 DEC 65
APPROVAL [illegible] 2/1/66
A. C. METZGER
NASA APPROVAL
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER ASSY, HEADER-
SIG

CODE IDENT NO. 99974
SIZE D
6900069
SCALE FULL
SHEET 1 OF 1

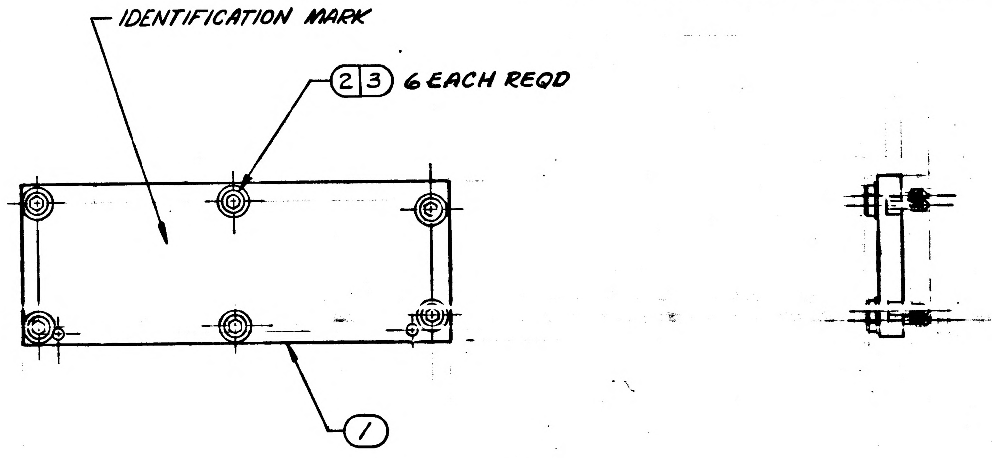
Charleston
9 DEC 65

6900070 B

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER D.O. 61362		16 DEC 65	
B		INITIAL RELEASE CLASS A PER TDRR 25864		3 JAN 66	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING DRAWING NUMUBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES 267).



QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
6		3	AN 960-C8	(1897006-028) WASHER, FLAT
6		2	6900071	SCREW, CAP, SOCKET HD, CAPTIVE
1		1	6900067	COVER, HEADER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900001-011	6900001-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − − − DECIMALS + − − − ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN 5 DEC 65
CHECKED J. Stelma 8 DEC 65
APPROVAL 9 Dec 65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER ASSY, HEADER, PSA

CODE IDENT NO. 99974
SIZE D
6900070
SCALE FULL
SHEET 1 OF 1

4 DEC 65

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER DO 61369		16 DEC 65	
B		INITIAL RELEASE CLASS A PER TDRR 26070		28 JAN 66	DKD

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
3. IDENTIFY USING PART NUMBER PER MIL-STD-130 (ES267).

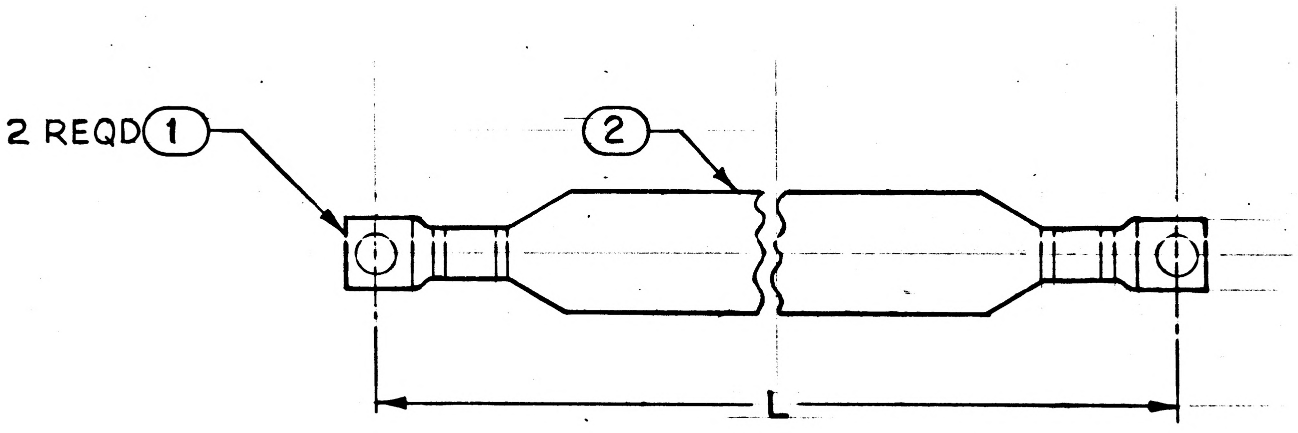


TABLE 1

DASH NO	L	USAGE
-001	13-13.5	BUFFER BOX TO COMP MTG PLATE
-002	18-18.5	DSKY TO COMP MTG PLATE

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2	2	AR	1016228	BRAID, WIRE
SEE NOTE 2	1	2	1016295-006	TERMINAL-LUG

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8102185	8102185

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS
DRAWN J. Parks DATE 3 DEC 65
CHECKED Pioppa 15 DEC 65
APPROVAL
APPROVAL J. Miniton 2-1-66
NASA APPROVAL A. G. METZGER
MIT APPROVAL 9 FEB 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

LEAD, ELECTRICAL

CODE IDENT NO. 99974
SIZE C
6900072
SCALE —
SHEET 1 OF 1

MIL 1077C-P

APPLICATION	
NEXT ASSY	USED ON
6900073-011	6900073-011

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACES REV (+) WITH CHANGE PER MXC 208404	25 JAN 66	RLP / MBM
B	REV. PER MXC 208559	14 FEB 66	DKD / gt
C	INITIAL RELEASE CLASS A PER TDRR 27526	2 MAR '66	WS

Charleston
12 JAN 66

REV							
SHEET							
REV STATUS	REV	C	C	C	C	C	C	C
OF SHEETS	SHEET	1	2	3	4	5	6	7

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

		DATE
DRAWN	Jenninske	10 DEC 65
CHECKED	W. Diehl	10 DEC 65
APPROVAL	E. Swanson	10 DEC 65
APPROVAL	J. M. Weston	3-23-66
NASA APPROVAL	A. C. METZGER	
MIT APPROVAL		
CONTRACT	NAS 9-497	

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W181

CODE IDENT NO.	SIZE		REV
99974	A	6900075	C
SCALE —		SHEET 1 OF 7	

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER ND1002032.
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019 USING .12 INCH HIGH CHARACTERS.
6	ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.
7	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
8	ITEMS 8 AND 11 FURNISHED WITH ITEM 5.
9	APPLY LEAD IDENTIFICATION TO SLEEVES PER ND 1002019.
10	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 16 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
11	SECURE TO CABLE USING ITEM 15 MARKING TO READ AWAY FROM CONNECTOR.
12	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
13	SERIALIZE PER ND 1002023.
14	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED .12 HIGH, COLOR BLACK, HOT EMPRESSION STAMPING PER ND 1002019. CENTRALIZE.
15	ASSEMBLE PER ND 1002032.

SIZE	CODE IDENT NO.	
A	99974	6900075
SCALE-NONE	REV LTR ~~A~~ C	SHEET 2 OF 7

NOTE NUMBER	GENERAL NOTES DESCRIPTION
16	ZIPPER TUBING SHALL HAVE -Z- TYPE TRACK.
17	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER. L - WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900075
SCALE-NONE	REV LTR ~~A~~ C	SHEET 3 OF 7

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900075-001	WIRE, ND1002181, TYPE 1, CLASS 1, 20AWG, WHT, 22 FT. TOTAL LENGTH
	2	1	6900075-002	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 16AWG, WHT/BLU, WHT/RED, 5.5 FT. TOTAL LENGTH
16	3	1	6900075-003	ZIPPER TUBING PER ND1002155 TYPE 1, GRAY, .500 DIA., 5.5 FT. TOTAL LENGTH
7	4	1	1897215-004	CONNECTOR PLUG, ELECT.
	5	1	MS3124F-20-16SW	CONNECTOR PLUG, ELECT.
7	6	5	1016369-420	CONTACT PINS
7	7	2	1016369-720	CONTACT PINS
7	8	X	MS3193-A20A	(1896877-020) CONTACT, SOCKETS
7	9	2	1016281-181	CONTACT SOCKETS
7	10	2	1010490-226	INSULATION SLEEVING, ELECT.
7	11	X	1016282- 18	RUBBER GROMMET
7	12	1	1016282- 24	RUBBER GROMMET
7	13	1	1016128-011	IDENTIFICATION BAND
7	14	2	1016128-041	IDENTIFICATION BAND
	15	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2 BLACK, (ES2732)
	16	AR	MIL-I-631	FILLER TAPE, TYPE F, FORM S, (BLACK), GRADE A CLASS I, .62 WIDE .020 INCH THICK.

SIZE	CODE IDENT NO.	
A	99974	6900075
SCALE-NONE	REV LTR ~~B~~ C	SHEET 4 OF 7

CABLE ASSEMBLY W181 6900075 8

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
7	17	1	1897330-001	CLAMP, CABLE
7	18	1	1897331-001	ADAPTER, CABLE CLAMP
	19	1	6900075-004	WIRE, N01002181, TYPE 1, CLASS 1, 16AWG, WHT., 6.00 INCHES TOTAL LENGTH
7	20	1	1016006-002	SPLICE REDUCER
7	21	1	1010490-258	INSULATION SLEEVING, ELECT

SIZE A	CODE IDENT NO. 99974	6900075	
SCALE-NONE	REV LTR 8C	SHEET 5 OF 7	

MIL 2084 9-65

CABLE ASSEMBLY W181 6900075 8

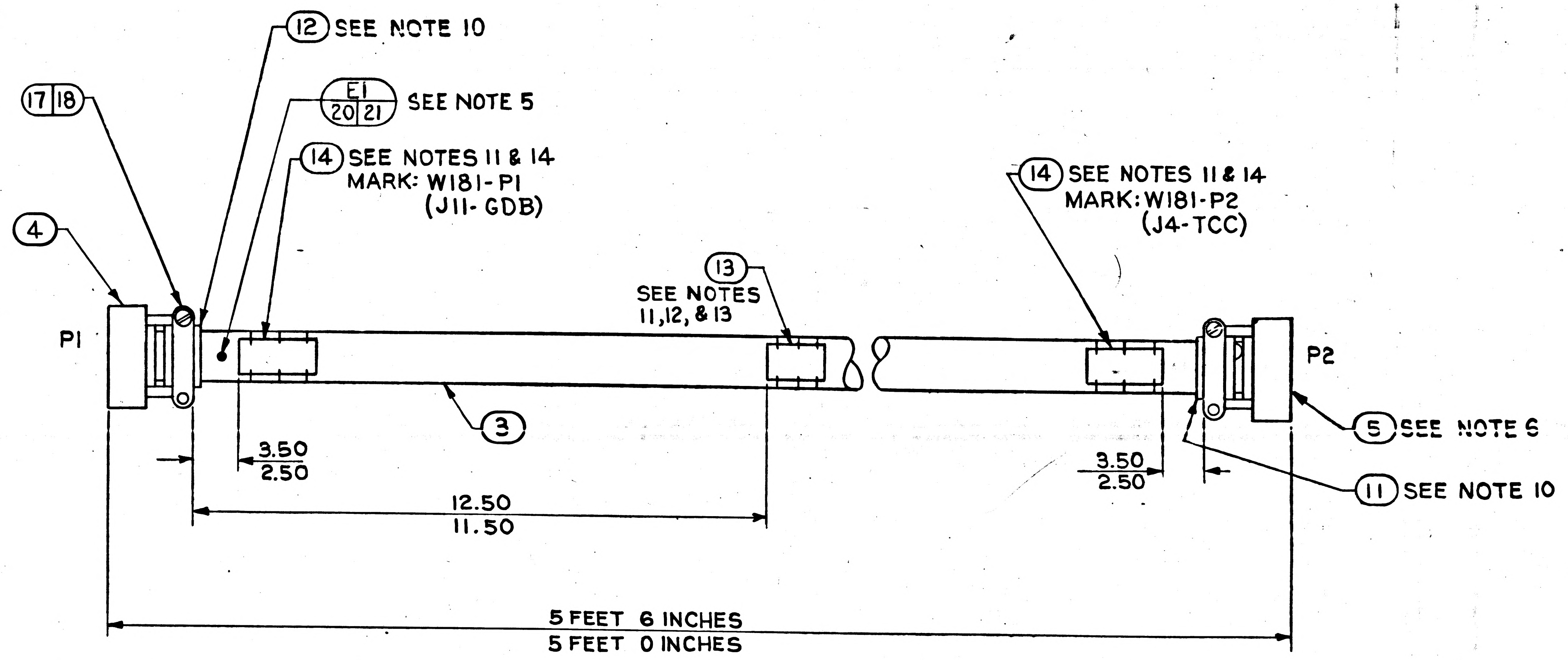
	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1		P1-3 P2-B					.19 .22	NO NO		6 8	
A	2	1		P1-4 P2-C					.19 .22	NO NO		6 8	
A	3	2				5.80 3.30	5.50 3.00				7 7	10 10	
A	3L			P1-6 P2-F					.28 .25	NO NO		7 9	
A	3R			E1-BB P2-E				4.00	.38 .25	NO NO		 9	
A	4	19		P1-5 E1-B					.28 .38	NO NO		7	
A	5	1		P1-7 E1-B					.19 .38	NO NO		6	
A	6	1		P1-8 P2-P					.19 .22	NO NO		6 8	
A	7	1		P1-9 P2-R					.19 .22	NO NO		6 8	

SIZE A	CODE IDENT NO. 99974	6900075	
SCALE-NONE	REV LTR 8C	SHEET 6 OF 7	

MIL 2084 9-65

REVISIONS TDRR 27526

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
		SEE SHEET 1 FOR REVISION RECORD.			



12 SEE NOTE 10
17 18
E1 20 21 SEE NOTE 5
14 SEE NOTES 11 & 14
MARK: W181-P1
(J11-GDB)
4
P1
13
SEE NOTES 11,12, & 13
3
3.50
2.50
12.50
11.50
14 SEE NOTES 11 & 14
MARK: W181-P2
(J4-TCC)
P2
5 SEE NOTE 6
3.50
2.50
11 SEE NOTE 10
5 FEET 6 INCHES
5 FEET 0 INCHES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS + _ − ; 3 PLACE DECIMALS + _ − ; ANGLES + _ −	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Janowiak DATE 10 DEC 65 CHECKED W. Duehl 10 DEC 65 APPROVAL J. M. Watson 3-23-66 CONTRACT NAS 9-497	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W181
MATERIAL	NASA APPROVAL A. C. METZGER	SIZE C · CODE IDENT NO. 99974 · 6900075
APPROVAL	MIT APPROVAL W Kupfer 29 Mar 66	SCALE NONE · SHEET 7 OF 7

MASTER

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	REPLACES REV (+) WITH CHANGE PER MXC 209930	16 MAR 66	
B	REVISED PER MXC 210436	31-MAR-66	B.
C	REVISED PER MXC 211613	22 APR 66	RWT
D	INITIAL RELEASE CLASS A PER TDRR 28601	3-MAY 66	GM EF

REV	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SHEET	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47

REV STATUS OF SHEETS																								
REV			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SHEET			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

		DAY MO YR
DRAFTSMAN	J. Kilvinger	9 DEC 65
CHECKER		13 DEC 65
ENGINEER		14 DEC 65
APPROVAL		
CONTR NO.	NAS 9-497	

NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W556

SIZE	CODE IDENT. NO	
A	99974	690C079
SCALE NONE		SHEET 1 OF 75

MIL 1377A6 12-65

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
48	D																
49	D																
50	D																
51	D																
52	D																
53	D																
54	D																
55	D																
56	D																
57	D																
58	D																
59	D																
60	D																
61	D																
62	D																
63	D																
64	D																
65	D																
66	D																
67	D																
68	D																
69	D																
70	D																
71	D																
72	D																
73	D																
74	D																
75	D																

SIZE A	CODE IDENT. NO. 99974	6900079	
SCALE NONE	REV LTR D		SHEET 2 OF 75

MIL 1377A3 8-65

GENERAL NOTES

NOTE NUMBER — DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER -
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 17.

4 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

5 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

7 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - FROM END SHIELD
B - TO END SHIELD
W - WHITE

8 MARK REFERENCE DESIGNATIONS SHOWN PER ND1002019, HOT IMPRESSION STAMPING, USING .12 BLACK CHARACTERS CENTRALIZED.

9 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 16 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP

10 SERIALIZE PER ND1002032

11 LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES

12 ASSEMBLE PER ND1002032

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D		SHEET 3 OF 75

GENERAL NOTES

NOTE NUMBER — DESCRIPTION

13 AT ASSEMBLY OF ITEM 19 REMOVE 4 SELF-LOCKING NUTS SECURING LOCATING PINS TO CONNECTOR AND DISCARD. ATTACH ITEM 19 USING LOCATING PINS.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D		SHEET 4 OF 75

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900079-001	WIRE ND1002181 TYPE 1 CLASS 4 22 AWG WHT JKT WHT 1048 FT TOTAL LENGTH
	2	1	6900079-002	WIRE ND1002161 TYPE 1 CLASS 1 24 AWG WHT 131 FT TOTAL LENGTH
	3	1	6900079-006	ZIPPER TUBING PER ND1002155 TYPE 4 GREY 2.5 DIA 4 FT TOTAL LENGTH 2 CHANNEL
4	4	262	1016369-421	CONTACT, SOCKET
	5	1	6900079-005	WIRE ND1002181 TYPE 1 CLASS 1 16 AWG WHT 2 FT TOTAL LENGTH
	6	1	6900079-004	WIRE ND1002181 TYPE 1 CLASS 1 20 AWG WHT 6 FT TOTAL LENGTH
4	7	262	1897300-002	CONTACT, SPRING SOCKET
4	8	262	1010763-002	SOLDER SLEEVE
4	9	524	1010490-232	INSULATION SLEEVING SHRINK FIT
4	10	1	2901434-011 ~~1897336-001~~	CONNECTOR
4	11	1	6900050-011	CONNECTOR
4	12	22	1016006-002	SPLICE REDUCER
4	13	22	1010490-258	INSULATION SLEEVING SHRINK FIT
	14		1015902-003	DELETED
4	15	4	1016128-021	BAND IDENTIFICATION

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D		SHEET 5 OF 75

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	16	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A, CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	17	AR	MIL-T-713B TYPE P CLASS 2,BLK	LACING TAPE
4	18	262	1015864-232	INSULATION SLEEVING, ELECT.
4	19	2	1897391	CLAMP, CABLE DUAL ENTRY
	20		1010490-166	DELETED
4	21	2	1016006-004	SPLICE REDUCER
4	22	2	1010490-342	INSULATION SLEEVING SHRINK FIT
4	23	1	2901434-021 ~~1897336-002~~	CONNECTOR
	24	AR	MIL-I-15126 TYPE ACT	INSULATION TAPE ELEC PRESSURE SENSITIVE THERMO SETTING ADHESIVE, .75 + OR -.03 WIDE (ES2716 TYPE C)
	25	2	1016369-721	CONTACT, SOCKET

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D		SHEET 6 OF 75

CABLE W556 6900079 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 3B	2		E1-B SHLD A3					.25 .25	NO NO			
A 3W			P1-A3 P2-A5					.15 .19	NO NO		7, 18 4	
A 4	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 4B	2		E1-B SHLD A4					.25 .25	NO NO			
A 4W			P1-A4 P2-A6					.15 .19	NO NO		7, 18 4	
A 5	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 5B	2		E1-B SHLD A5					.25 .25	NO NO			
A 5W			P1-A5 P2-B1					.15 .19	NO NO		7, 18 4	
A 6	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 6B	2		E1-B SHLD A6					.25 .25	NO NO			
A 6W			P1-A6 P2-B2					.15 .19	NO NO		7, 18 4	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 7	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 7B	2		E1-B SHLD A7					.25 .25	NO NO			
A 7W			P1-A7 P2-B3					.15 .19	NO NO		7, 18 4	
A 8	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 8B	2		E1-B SHLD A8					.25 .25	NO NO			
A 8W			P1-A8 P2-B4					.15 .19	NO NO		7, 18 4	
A 9	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 9B	2		E1-B SHLD A9					.25 .25	NO NO			
A 9W			P1-A9 P2-B5					.15 .19	NO NO		7, 18 4	
A 10	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 10B	2		E1-B SHLD A10					.25 .25	NO NO			
A 10W			P1-A10 P2-B6					.15 .19	NO NO		7, 18 4	

CABLE W556 6900079 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 11	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 11B	2		E1-B SHLD A11					.25 .25	NO NO			
A 11W			P1-A11 P2-B7					.15 .19	NO NO		7, 18 4	
A 12	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 12B	2		E1-B SHLD A12					.25 .25	NO NO			
A 12W			P1-A12 P2-B8					.15 .19	NO NO		7, 18 4	
A 13	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 13B	2		E1-B SHLD A13					.25 .25	NO NO			
A 13W			P1-A13 P2-C1					.15 .19	NO NO		7, 18 4	
A 14	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 14B	2		E1-B SHLD A14					.25 .25	NO NO			
A 14W			P1-A14 P2-C2					.15 .19	NO NO		7, 18 4	

CABLE W556 6900079 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 15B	2		E2-B SHLD A15					.25 .25	NO NO			
A 15W			P1-A15 P2-C3					.15 .19	NO NO		7, 18 4	
A 16	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 16B	2		E2-B SHLD A16					.25 .25	NO NO			
A 16W			P1-B1 P2-C4					.15 .19	NO NO		7, 18 4	
A 17	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 17B	2		E2-B SHLD A17					.25 .25	NO NO			
A 17W			P1-B2 P2-C5					.15 .19	NO NO		7, 18 4	
A 18	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 18B	2		E2-B SHLD A18					.25 .25				
A 18W			P1-B3 P2-C6					.15 .19			7, 18 4	

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-B4 P2-C7					.15 .19	NO NO		7, 18 4	
A 20	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 20B	2		E2-B SHLD A20					.25 .25	NO NO			
A 20W			P1-B5 P2-C8					.15 .19	NO NO		7, 18 4	
A 21	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 21B	2		E2-B SHLD A21					.25 .25	NO NO			
A 21W			P1-B6 P2-D1					.15 .19	NO NO		7, 18 4	
A 22	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 22B	2		E2-B SHLD A22					.25 .25	NO NO			
A 22W			P1-B7 P2-D2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
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CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 23B	2		E2-B SHLD A23					.25 .25	NO NO			
A 23W			P1-B8 P2-D3					.15 .19	NO NO		7, 18 4	
A 24	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 24B	2		E2-B SHLD A24					.25 .25	NO NO			
A 24W			P1-B9 P2-D4					.15 .19	NO NO		7, 18 4	
A 25	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 25B	2		E2-B SHLD A25					.25 .25	NO NO			
A 25W			P1-B10 P2-D5					.15 .19	NO NO		7, 18 4	
A 26	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 26B	2		E2-B SHLD A26					.25 .25	NO NO			
A 26W			P1-B11 P2-D6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 12 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 27B	2		E3-B SHLD A27					.25 .25	NO NO			
A 27W			P1-B12 P2-D7					.15 .19	NO NO		7, 18 4	
A 28	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 28B	2		E3-B SHLD A28					.25 .25	NO NO			
A 28W			P1-B13 P2-D8					.15 .19	NO NO		7, 18 4	
A 29	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 29B	2		E3 SHLD A29					.25 .25	NO NO			
A 29W			P1-B14 P2-E1					.15 .19	NO NO		7, 18 4	
A 30	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 30B	2		E3 SHLD A30					.25 .25	NO NO			
A 30W			P1-B15 P2-E2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 13 OF 75

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CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31	1				6.75 6.75	6.50 6.50				8,7 A,6A		
A 31B	2		E3 SHLD A31					.25 .25	NO NO			
A 31W			P1-C1 P2-E3					.15 .19	NO NO		7, 18 4	
A 32	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 32B	2		E3 SHLD A32					.25 .25	NO NO			
A 32W			P1-C2 P2-E4					.15 .19	NO NO		7, 18 4	
A 33	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 33B	2		E3-B SHLD A33					.25 .25	NO NO			
A 33W			P1-C3 P2-E5					.15 .19	NO NO		7, 18 4	
A 34	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 34B	2		E3-B SHLD A34					.25 .25	NO NO			
A 34W			P1-C4 P2-E6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 14 OF 75

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CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 35	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 35B	2		E3-B SHLD A35					.25 .25	NO NO			
A 35W			P1-C5 P2-E7					.15 .19	NO NO		7, 18 4	
A 36	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 36B	2		E3-B SHLD A36					.25 .25	NO NO			
A 36W			P1-C6 P2-E8					.15 .19	NO NO		7, 18 4	
A 37	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 37B	2		E3-B SHLD A37					.25 .25	NO NO			
A 37W			P1-C7 P2-F1					.15 .19	NO NO		7, 18 4	
A 38	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 38B	2		E3-B SHLD A38					.25 .25	NO NO			
A 38W			P1-C8 P2-F2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 15 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 39	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 39B	2		E4-B SHLD A39					.25 .25	NO NO			
A 39W			P1-C9 P2-F3					.15 .19	NO NO		7, 18 4	
A 40	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 40B	2		E4-B SHLD A40					.25 .25	NO NO			
A 40W			P1-C10 P2-F4					.15 .19	NO NO		7, 18 4	
A 41	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 41B	2		E4-B SHLD A41					.25 .25	NO NO			
A 41W			P1-C11 P2-F5					.15 .19	NO NO		7, 18 4	
A 42	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 42B	2		E4-B SHLD A42					.25 .25	NO NO			
A 42W			P1-C12 P2-F6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 16 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 43B	2		E4-B SHLD A43					.25 .25	NO NO			
A 43W			P1-C13 P2-F7					.15 .19	NO NO		7, 18 4	
A 44	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 44B	2		E4-B SHLD A44					.25 .25	NO NO			
A 44W			P1-C14 P2-F8					.15 .19	NO NO		7, 18 4	
A 45	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 45B	2		E4-B SHLD A45					.25 .25	NO NO			
A 45W			P1-C15 P2-G1					.15 .19	NO NO		7, 18 4	
A 46	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 46B	2		E4-B SHLD A46					.25 .25	NO NO			
A 46W			P1-D1 P2-G2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 17 OF 75

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CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 47B	2		E4-B SHLD A47					.25 .25	NO NO			
A 47W			P1-D2 P2-G3					.15 .19	NO NO		7, 18 4	
A 48	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 48B	2		E4-B SHLD A48					.25 .25	NO NO			
A 48W			P1-D3 P2-G4					.15 .19	NO NO		7, 18 4	
A 49	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 49B	2		E4-B SHLD A49					.25 .25	NO NO			
A 49W			P1-D4 P2-G5					.15 .19	NO NO		7, 18 4	
A 50	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 50B	2		E4-B SHLD A50					.25 .25	NO NO			
A 50W			P1-D5 P2-G6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 18 OF 75

MIL 2084 9-65

CABLF W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 51	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 51B	2		E5-B SHLD A51					.25 .25	NO NO			
A 51W			P1-D6 P2-G7					.15 .19	NO NO		7, 18 4	
A 52	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 52B	2		E5-B SHLD A52					.25 .25	NO NO			
A 52W			P1-D7 P2-G8					.15 .19	NO NO		7, 18 4	
A 53	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 53B	2		E5-B SHLD A53					.25 .25	NO NO			
A 53W			P1-D8 P2-H1					.15 .19	NO NO		7, 18 4	
A 54	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 54B	2		E5-B SHLD A54					.25 .25	NO NO			
A 54W			P1-D9 P2-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 19 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 55	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 55B	2		E5-B SHLD A55					.25 .25	NO NO			
A 55W			P1-D10 P2-H3					.15 .19	NO NO		7, 18 4	
A 56	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 56B	2		E5-B SHLD A56					.25 .25	NO NO			
A 56W			P1-D11 P2-H4					.15 .19	NO NO		7, 18 4	
A 57	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 57B	2		E5-B SHLD A57					.25 .25	NO NO			
A 57W			P1-D12 P2-H5					.15 .19	NO NO		7, 18 4	
A 58	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 58B	2		E5-B SHLD A58					.25 .25	NO NO			
A 58W			P1-D13 P2-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 20 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 59	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 59B	2		E5-B SHLD A59					.25 .25	NO NO			
A 59W			P1-D14 P2-H7					.15 .19	NO NO		7, 18 4	
A 60	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 60B	2		E5-B SHLD A60					.25 .25	NO NO			
A 60W			P1-D15 P2-H8					.15 .19	NO NO		7, 18 4	
A 61	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 61B	2		E5-B SHLD A61					.25 .25	NO NO			
A 61W			P1-F1 P2-J1					.15 .19	NO NO		7, 18 4	
A 62	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 62B	2		E5-B SHLD A62					.25 .25	NO NO			
A 62W			P1-F2 P2-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 21 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 63B	2		E6-B SHLD A63					.25 .25	NO NO			
A 63W			P1-F3 P2-J3					.15 .19	NO NO		7, 18 4	
A 64	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 64B	2		E6-B SHLD A64					.25 .25	NO NO			
A 64W			P1-F4 P2-J4					.15 .19	NO NO		7, 18 4	
A 65	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 65B	2		E6-B SHLD A65					.25 .25	NO NO			
A 65W			P1-F5 P2-J5					.15 .19	NO NO		7, 18 4	
A 66	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 66B	2		E6-B SHLD A66					.25 .25	NO NO			
A 66W			P1-F6 P2-J6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 22 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 67	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 67B	2		E6-B SHLD A67					.25 .25	NO NO			
A 67W			P1-F7 P2-J7					.15 .19	NO NO		7, 18 4	
A 68	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 68B	2		E6-B SHLD A68					.25 .25	NO NO			
A 68W			P1-F8 P2-J8					.15 .19	NO NO		7, 18 4	
A 69	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 69B	2		E6-B SHLD A69					.25 .25	NO NO			
A 69W			P1-F9 P2-K1					.15 .19	NO NO		7, 18 4	
A 70	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 70B	2		E6-B SHLD A70					.25 .25	NO NO			
A 70W			P1-F10 P2-K2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 23 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 71	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 71B	2		E6-B SHLD A71					.25 .25	NO NO			
A 71W			P1-F11 P2-K3					.15 .19	NO NO		7, 18 4	
A 72	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 72B	2		E6-B SHLD A72					.25 .25	NO NO			
A 72W			P1-F12 P2-K6					.15 .19	NO NO		7, 18 4	
A 73	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 73B	2		E6-B SHLD A73					.25 .25	NO NO			
A 73W			P1-F13 P2-K7					.15 .19	NO NO		7, 18 4	
A 74	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 74B	2		E6-B SHLD A74					.25 .25	NO NO			
A 74W			P1-F14 P2-K8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 24 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 75B	2		E7-B SHLD A75					.25 .25	NO NO			
A 75W			P1-F15 P2-L1					.15 .19	NO NO		7, 18 4	
A 76	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 76B	2		E7-B SHLD A76					.25 .25	NO NO			
A 76W			P1-G1 P2-L2					.15 .19	NO NO		7, 18 4	
A 77	1				7.75 6.75	7.00 6.00				8,7 A,6A	9 8, 9	
A 77B	2		E7-B SHLD A77					.25 .25	NO NO			
A 77W			P1-G2 P2-L7					.15 .19	NO NO		7, 18 4	
A 78	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 78B	2		E7-B SHLD A78					.25 .25	NO NO			
A 78W			P1-G3 P2-L8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 25 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 79B	2		E7-B SHLD A79					.25 .25	NO NO			
A 79W			P1-G4 P2-M1					.15 .19	NO NO		7, 18 4	
A 80	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 80B	2		E7-B SHLD A80					.25 .25	NO NO			
A 80W			P1-G5 P2-M2					.15 .19	NO NO		7, 18 4	
A 81	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 81B	2		E7-B SHLD A81					.25 .25	NO NO			
A 81W			P1-G6 P2-M3					.15 .19	NO NO		7, 18 4	
A 82	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 82B	2		E7-B SHLD A82					.25 .25	NO NO			
A 82W			P1-G7 P2-M6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 26 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 83	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 83B	2		E7-8 SHLD A83					.25 .25	NO NO			
A 83W			P1-G8 P2-M7					.15 .19	NO NO		7, 18 4	
A 84	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 84B	2		E7-8 SHLD A84					.25 .25	NO NO			
A 84W			P1-G9 P2-M8					.15 .19	NO NO		7, 18 4	
A 85	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 85B	2		E7-8 SHLD A85					.25 .25	NO NO			
A 85W			P1-G10 P2-N1					.15 .19	NO NO		7, 18 4	
A 86	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 86B	2		E7-8 SHLD A86					.25 .25	NO NO			
A 86W			P1-G11 P2-N2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 27 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 87B	2		E8-8 SHLD A87					.25 .25	NO NO			
A 87W			P1-G12 P2-N3					.15 .19	NO NO		7, 18 4	
A 88	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 88B	2		E8-8 SHLD A88					.25 .25	NO NO			
A 88W			P1-G13 P2-N4					.15 .19	NO NO		7, 18 4	
A 89	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 89B	2		E8-8 SHLD A89					.25 .25	NO NO			
A 89W			P1-G14 P2-N5					.15 .19	NO NO		7, 18 4	
A 90	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 90B	2		E8-8 SHLD A90					.25 .25	NO NO			
A 90W			P1-G15 P2-N6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 28 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 91B	2		E8-8 SHLD A91					.25 .25	NO NO			
A 91W			P1-H1 P2-N7					.15 .19	NO NO		7, 18 4	
A 92	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 92B	2		E8-8 SHLD A92					.25 .25	NO NO			
A 92W			P1-H2 P2-N8					.15 .19	NO NO		7, 18 4	
A 93	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 93B	2		E8-8 SHLD A93					.25 .25	NO NO			
A 93W			P1-H3 P2-P1					.15 .19	NO NO		7, 18 4	
A 94	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 94B	2		E8-8 SHLD A94					.25 .25	NO NO			
A 94W			P1-H4 P2-P2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 29 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 95B	2		E8-8 SHLD A95					.25 .25	NO NO			
A 95W			P1-H5 P2-P3					.15 .19	NO NO		7, 18 4	
A 96	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 96B	2		E8-8 SHLD A96					.25 .25	NO NO			
A 96W			P1-H6 P2-P4					.15 .19	NO NO		7, 18 4	
A 97	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 97B	2		E8-8 SHLD A97					.25 .25	NO NO			
A 97W			P1-H7 P2-P5					.15 .19	NO NO		7, 18 4	
A 98	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 98B	2		E8-8 SHLD A98					.25 .25	NO NO			
A 98W			P1-H8 P2-P6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 30 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 99	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 99B	2		E9-B SHLD A99					.25 .25	NO NO			
A 99W			P1-H9 P2-P7					.15 .19	NO NO		7, 18 4	
A 100	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 100B	2		E9-B SHLD A100					.25 .25	NO NO			
A 100W			P1-H10 P2-P8					.15 .19	NO NO		7, 18 4	
A 101	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 101B	2		E9-B SHLD A101					.25 .25	NO NO			
A 101W			P1-H11 P2-R1					.15 .19	NO NO		7, 18 4	
A 102	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 102B	2		E9-B SHLD A102					.25 .25	NO NO			
A 102W			P1-H12 P2-R2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 31 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 103B	2		E9-B SHLD A103					.25 .25	NO NO			
A 103W			P1-H13 P2-R3					.15 .19	NO NO		7, 18 4	
A 104	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 104B	2		E9-B SHLD A104					.25 .25	NO NO			
A 104W			P1-H14 P2-R4					.15 .19	NO NO		7, 18 4	
A 105	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 105B	2		E9-B SHLD A105					.25 .25	NO NO			
A 105W			P1-H15 P2-R5					.15 .19	NO NO		7, 18 4	
A 108	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 108B	2		E9-B SHLD A108					.25 .25	NO NO			
A 108W			P1-K3 P2-R8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 32 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 109B	2		E9-B SHLD A109					.25 .25	NO NO			
A 109W			P1-K4 P2-S1					.15 .19	NO NO		7, 18 4	
A 110	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 110B	2		E9-B SHLD A110					.25 .25	NO NO			
A 110W			P1-K5 P2-S2					.15 .19	NO NO		7, 18 4	
A 111	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 111B	2		E9-B SHLD A111					.25 .25	NO NO			
A 111W			P1-K6 P2-S3					.15 .19	NO NO		7, 18 4	
A 112	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 112B	2		E9-B SHLD A112					.25 .25	NO NO			
A 112W			P1-K7 P2-S4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 33 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 113	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 113B	2		E10-B SHLD A113					.25 .25	NO NO			
A 113W			P1-K8 P2-S5					.15 .19	NO NO		7, 18 4	
A 114	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 114B	2		E10-B SHLD A114					.25 .25	NO NO			
A 114W			P1-K9 P2-S6					.15 .19	NO NO		7, 18 4	
A 115	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 115B	2		E10-B SHLD A115					.25 .25	NO NO			
A 115W			P1-K10 P2-S7					.15 .19	NO NO		7, 18 4	
A 116	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 116B	2		E10-B SHLD A116					.25 .25	NO NO			
A 116W			P1-K11 P2-S8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 34 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 117	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 117B	2		E10-B SHLD A117					.25 .25	NO NO			
A 117W			P1-K12 P2-T1					.15 .19	NO NO		7, 18 4	
A 118	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 118B	2		E10-B SHLD A118					.25 .25	NO NO			
A 118W			P1-K13 P2-T2					.15 .19	NO NO		7, 18 4	
A 119	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 119B	2		E10-B SHLD A119					.25 .25	NO NO			
A 119W			P1-K14 P2-T3					.15 .19	NO NO		7, 18 4	
A 120	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 120B	2		E10-B SHLD A120					.25 .25	NO NO			
A 120W			P1-K15 P2-T4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 35 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 126B	2		E10-B SHLD A126					.25 .25	NO NO			
A 126W			P1-A21 P2-U2					.15 .19	NO NO		7, 18 4	
A 127	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 127B	2		E10-B SHLD A127					.25 .25	NO NO			
A 127W			P1-A22 P2-U3					.15 .19	NO NO		7, 18 4	
A 128	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 128B	2		E10-B SHLD A128					.25 .25	NO NO			
A 128W			P1-A23 P2-U4					.15 .19	NO NO		7, 18 4	
A 129	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 129B	2		E10-B SHLD A129					.25 .25	NO NO			
A 129W			P1-A24 P2-U5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 36 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 130	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 130B	2		E11-B SHLD A130					.25 .25	NO NO			
A 130W			P1-A25 P2-U6					.15 .19	NO NO		7, 18 4	
A 131	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 131B	2		E11-B SHLD A131					.25 .25	NO NO			
A 131W			P1-B16 P2-U7					.15 .19	NO NO		7, 18 4	
A 132	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 132B	2		E11-B SHLD A132					.25 .25	NO NO			
A 132W			P1-B17 P2-U8					.15 .19	NO NO		7, 18 4	
A 133	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 133B	2		E11-B SHLD A133					.25 .25	NO NO			
A 133W			P1-B18 P2-V1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 37 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 134	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 134B	2		E11-B SHLD A134					.25 .25	NO NO			
A 134W			P1-B19 P2-V2					.15 .19	NO NO		7, 18 4	
A 135	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 135B	2		E11-B SHLD A135					.25 .25	NO NO			
A 135W			P1-B20 P2-V3					.15 .19	NO NO		7, 18 4	
A 136	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 136B	2		E11-B SHLD A136					.25 .25	NO NO			
A 136W			P1-B21 P2-V4					.15 .19	NO NO		7, 18 4	
A 137	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 137B	2		E11-B SHLD A137					.25 .25	NO NO			
A 137W			P1-B22 P2-V5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 38 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 138	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 138B	2		E11-B SHLD A138					.25 .25	NO NO			
A 138W			P1-B23 P2-V6					.15 .19	NO NO		7, 18 4	
A 139	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 139B	2		E11-B SHLD A139					.25 .25	NO NO			
A 139W			P1-B24 P2-V7					.15 .19	NO NO		7, 18 4	
A 140	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 140B	2		E11-B SHLD A140					.25 .25	NO NO			
A 140W			P1-B25 P2-V8					.15 .19	NO NO		7, 18 4	
A 141	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 141B	2		E11-B SHLD A141					.25 .25	NO NO			
A 141W			P1-C16 P2-W1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 39 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 142	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 142B	2		E12-B SHLD A142					.25 .25	NO NO			
A 142W			P1-C17 P2-W2					.15 .19	NO NO		7, 18 4	
A 143	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 143B	2		E12-B SHLD A143					.25 .25	NO NO			
A 143W			P1-C18 P2-W3					.15 .19	NO NO		7, 18 4	
A 144	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 144B	2		E12-B SHLD A144					.25 .25	NO NO			
A 144W			P1-C19 P2-W4					.15 .19	NO NO		7, 18 4	
A 145	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 145B	2		E12-B SHLD A145					.25 .25	NO NO			
A 145W			P1-C20 P2-W5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 40 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 146	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 146B	2		E12-B SHLD A146					.25 .25	NO NO			
A 146W			P1-C21 P2-W6					.15 .19	NO NO		7, 18 4	
A 147	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 147B	2		E12-B SHLD A147					.25 .25	NO NO			
A 147W			P1-C22 P2-W7					.15 .19	NO NO		7, 18 4	
A 148	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 148B	2		E12-B SHLD A148					.25 .25	NO NO			
A 148W			P1-C23 P2-W8					.15 .19	NO NO		7, 18 4	
A 149	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 149B	2		E12-B SHLD A149					.25 .25	NO NO			
A 149W			P1-C24 P2-X3					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D★	SHEET 41 OF 75

MIL 2084 9-65

CABLE W556 6900079 ★D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 150	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 150B	2		E12-B SHLD A150					.25 .25	NO NO			
A 150W			P1-C25 P2-X4					.15 .19	NO NO		7, 18 4	
A 151	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 151B	2		E12-B SHLD A151					.25 .25	NO NO			
A 151W			P1-D16 P2-X5					.15 .19	NO NO		7, 18 4	
A 152	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 152B	2		E12-B SHLD A152					.25 .25	NO NO			
A 152W			P1-D17 P3-X5					.15 .19	NO NO		7, 18 4	
A 153	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 153B	2		E13-B SHLD A153					.25 .25	NO NO			
A 153W			P1-D18 P3-A3					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR ★D	SHEET 42 OF 75

MIL 2084 9-65

CABLE W556

6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 154B	2		E13-B SHLD A154					.25 .25	NO NO			
A 154W			P1-D19 P3-A4					.15 .19	NO NO		7, 18 4	
A 155	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 155B	2		E13-B SHLD A155					.25 .25	NO NO			
A 155W			P1-D20 P3-A5					.15 .19	NO NO		7, 18 4	
A 156	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 156B	2		E13-B SHLD A156					.25 .25				
A 156W			P1-D21 P3-A6					.15 .19			7, 18 4	
A 157	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 157B	2		E13-B SHLD A157					.25 .25				
A 157W			P1-D22 P3-B1					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 43 OF 75

MIL 2084 9-65

CABLE W556

6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 158	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 158B	2		E13-B SHLD A158					.25 .25				
A 158W			P1-D23 P3-B2					.15 .19			7, 18 4	
A 159	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 159B	2		E13-B SHLD A159					.25 .25				
A 159W			P1-D24 P3-B3					.15 .19			7, 18 4	
A 160	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 160B	2		E13-B SHLD A160					.25 .25				
A 160W			P1-D25 P3-B4					.15 .19			7, 18 4	
A 161	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 161B	2		E13-B SHLD A161					.25 .25				
A 161W			P1-F16 P3-B5					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 44 OF 75

MIL 2084 9-65

CABLE W556

6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 162	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 162B	2		E13-B SHLD A162					.25 .25				
A 162W			P1-F17 P3-B6					.15 .19			7, 18 4	
A 163	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 163B	2		E13-B SHLD A163					.25 .25				
A 163W			P1-F18 P3-B7					.15 .19			7, 18 4	
A 164	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 164B	2		E13-B SHLD A164					.25 .25	NO NO			
A 164W			P1-F19 P3-B8					.15 .19	NO NO		7, 18 4	
A 165	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 165B	2		E13-B SHLD A165					.25 .25	NO NO			
A 165W			P1-F20 P3-C1					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 45 OF 75

MIL 2084 9-65

CABLE W556

6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 166	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 166B	2		E14-B SHLD A166					.25 .25	NO NO			
A 166W			P1-F21 P3-C2					.15 .19	NO NO		7, 18 4	
A 167	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 167B	2		E14-B SHLD A167					.25 .25	NO NO			
A 167W			P1-F22 P3-C3					.15 .19	NO NO		7, 18 4	
A 168	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 168B	2		E14-B SHLD A168					.25 .25	NO NO			
A 168W			P1-F23 P3-C4					.15 .19	NO NO		7, 18 4	
A 169	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 169B	2		E14-B SHLD A169					.25 .25	NO NO			
A 169W			P1-F24 P3-C5					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 46 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 170	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 170B	2		E14-B SHLD A170					.25 .25	NO NO			
A 170W			P1-F25 P3-C6					.15 .19	NO NO		7, 18 4	
A 171	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 171B	2		E14-B SHLD A171					.25 .25	NO NO			
A 171W			P1-G16 P3-C7					.15 .19	NO NO		7, 18 4	
A 172	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 172B	2		E14-B SHLD A172					.25 .25	NO NO			
A 172W			P1-G17 P3-C8					.15 .19	NO NO		7, 18 4	
A 173	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 173B	2		E14-B SHLD A173					.25 .25	NO NO			
A 173W			P1-G18 P3-D1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 47 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 174	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 174B	2		E14-B SHLD A174					.25 .25	NO NO			
A 174W			P1-G19 P3-D2					.15 .19	NO NO		7, 18 4	
A 175	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 175B	2		E14-B SHLD A175					.25 .25	NO NO			
A 175W			P1-G20 P3-D3					.15 .19	NO NO		7, 18 4	
A 176	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 176B	2		E14-B SHLD A176					.25 .25	NO NO			
A 176W			P1-G21 P3-D4					.15 .19	NO NO		7, 18 4	
A 177	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 177B	2		E14-B SHLD A177					.25 .25	NO NO			
A 177W			P1-G22 P3-D5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 48 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 178	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 178B	2		E15-B SHLD A178					.25 .25	NO NO			
A 178W			P1-G23 P3-D6					.15 .19	NO NO		7, 18 4	
A 179	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 179B	2		E15-B SHLD A179					.25 .25	NO NO			
A 179W			P1-G24 P3-D7					.15 .19	NO NO		7, 18 4	
A 180	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 180B	2		E15-B SHLD A180					.25 .25	NO NO			
A 180W			P1-G25 P3-D8					.15 .19	NO NO		7, 18 4	
A 181	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 181B	2		E15-B SHLD A181					.25 .25	NO NO			
A 181W			P1-H16 P3-F1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 49 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 182	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 182B	2		E15-B SHLD A182					.25 .25	NO NO			
A 182W			P1-H17 P3-F2					.15 .19	NO NO		7, 18 4	
A 183	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 183B	2		E15-B SHLD A183					.25 .25	NO NO			
A 183W			P1-H18 P3-F3					.15 .19	NO NO		7, 18 4	
A 184	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 184B	2		E15-B SHLD A185					.25 .25	NO NO			
A 184W			P1-H19 P3-F4					.15 .19	NO NO		7, 18 4	
A 185	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 185B	2		E15-B SHLD A185					.25 .25	NO NO			
A 185W			P1-H20 P3-F5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 50 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 186	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 186B	2		E15-B SHLD A186					.25 .25	NO NO			
A 186W			P1-H21 P3-F6					.15 .19	NO NO		7, 18 4	
A 187	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 187B	2		E15-B SHLD A186					.25 .25	NO NO			
A 187W			P1-H22 P3-F7					.15 .19	NO NO		7, 18 4	
A 188	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 188B	2		E15-B SHLD A188					.25 .25	NO NO			
A 188W			P1-H23 P3-F8					.15 .19	NO NO		7, 18 4	
A 189	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 189B	2		E15-B SHLD A189					.25 .25	NO NO			
A 189W			P1-H24 P3-G1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR AD
SHEET 51 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 190	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 190B	2		E16-B SHLD A190					.25 .25	NO NO			
A 190W			P1-H25 P3-G2					.15 .19	NO NO		7, 18 4	
A 196	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 196B	2		E16-B SHLD A196					.25 .25	NO NO			
A 196W			P1-K21 P3-G8					.15 .19	NO NO		7, 18 4	
A 197	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 197B	2		E16-B SHLD A197					.25 .25	NO NO			
A 197W			P1-K22 P3-H1					.15 .19	NO NO		7, 18 4	
A 198	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 198B	2		E16-B SHLD A198					.25 .25	NO NO			
A 198W			P1-K23 P3-H2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR AD
SHEET 52 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 199B	2		E16-B SHLD A199					.25 .25	NO NO			
A 199W			P1-K24 P3-H3					.15 .19	NO NO		7, 18 4	
A 200	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 200B	2		E16-B SHLD A200					.25 .25	NO NO			
A 200W			P1-K25 P3-H4					.15 .19	NO NO		7, 18 4	
A 201	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 201B	2		E16-B SHLD A201					.25 .25	NO NO			
A 201W			P1-A26 P3-H5					.15 .19	NO NO		7, 18 4	
A 202	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 202B	2		E16-B SHLD A202					.25 .25	NO NO			
A 202W			P1-A27 P3-H6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR AD
SHEET 53 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 203	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 203B	2		E16-B SHLD A203					.25 .25	NO NO			
A 203W			P1-A28 P3-H7					.15 .19	NO NO		7, 18 4	
A 204	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 204B	2		E16-B SHLD A204					.25 .25	NO NO			
A 204W			P1-A29 P3-H8					.15 .19	NO NO		7, 18 4	
A 205	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 205B	2		E16-B SHLD A205					.25 .25	NO NO			
A 205W			P1-A30 P3-J1					.15 .19	NO NO		7, 18 4	
A 206	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 206B	2		E16-B SHLD A206					.25 .25	NO NO			
A 206W			P1-A31 P3-J2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR AD
SHEET 54 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 207	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 207B	2		E17-B SHLD A207					.25 .25	NO NO			
A 207W			P1-A32 P3-J3					.15 .19	NO NO		7, 18 4	
A 208	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 208B	2		E17-B SHLD A208					.25 .25	NO NO			
A 208W			P1-A33 P3-J4					.15 .19	NO NO		7, 18 4	
A 211	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 211B	2		E17-B SHLD A211					.25 .25	NO NO			
A 211W			P1-B26 P3-J7					.15 .19	NO NO		7, 18 4	
A 212	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 212B	2		E17-B SHLD A212					.25 .25	NO NO			
A 212W			P1-B27 P3-J8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 55 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 213	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 213B	2		E17-B SHLD A213					.25 .25	NO NO			
A 213W			P1-B28 P3-K1					.15 .19	NO NO		7, 18 4	
A 214	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 214B	2		E17-B SHLD A214					.25 .25	NO NO			
A 214W			P1-B29 P3-K2					.15 .19	NO NO		7, 18 4	
A 215	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 215B	2		E17-B SHLD A215					.25 .25	NO NO			
A 215W			P1-B30 P3-K3					.15 .19	NO NO		7, 18 4	
A 216	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 216B	2		E17-B SHLD A216					.25 .25	NO NO			
A 216W			P1-B31 P3-K6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 56 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 217	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 217B	2		E17-B SHLD A217					.25 .25	NO NO			
A 217W			P1-B32 P3-K7					.15 .19	NO NO		7, 18 4	
A 218	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 218B	2		E17-B SHLD A218					.25 .25	NO NO			
A 218W			P1-B33 P3-K8					.15 .19	NO NO		7, 18 4	
A 219	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 219B	2		E17-B SHLD A219					.25 .25	NO NO			
A 219W			P1-B34 P3-L1					.15 .19	NO NO		7, 18 4	
A 220	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 220B	2		E17-B SHLD A220					.25 .25				
A 220W			P1-B35 P3-L2					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 57 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 221	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 221B	2		E18-B SHLD A221					.25 .25				
A 221W			P1-C26 P3-L7					.15 .19			7, 18 4	
A 222	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 222B	2		E18-B SHLD A222					.25 .25				
A 222W			P1-C27 P3-L8					.15 .19			7, 18 4	
A 223	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 223B	2		E18-B SHLD A223					.25 .25				
A 223W			P1-C28 P3-M1					.15 .19			7, 18 4	
A 224	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 224B	2		E18-B SHLD A224					.25 .25				
A 224W			P1-C29 P3-M2					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 5[illegible] OF 7[illegible]

MIL 2084 9-65

CABLE W556

6900079 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 225	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 225B	2		E18-B SHLD A224					.25 .25				
A 225W			P1-C30 P3-M3					.15 .19			7, 18 4	
A 226	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 226B	2		E18-B SHLD A226					.25 .25				
A 226W			P1-C31 P3-M6					.15 .19			7, 18 4	
A 227	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 227B	2		E18-B SHLD A227					.25 .25				
A 227W			P1-C32 P3-M7					.15 .19			7, 18 4	
A 228	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 228B	2		E18-B SHLD A228					.25 .25	NO NO			
A 228W			P1-C33 P3-M8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 59 OF 75

CABLE W556

6900079 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 229	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 229B	2		E18-B SHLD A229					.25 .25	NO NO			
A 229W			P1-C34 P3-N1					.15 .19	NO NO		7, 18 4	
A 230	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 230B	2		E18-B SHLD A230					.25 .25	NO NO			
A 230W			P1-C35 P3-N2					.15 .19	NO NO		7, 18 4	
A 231	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 231B	2		E18-B SHLD A231					.25 .25	NO NO			
A 231W			P1-D26 P3-N3					.15 .19	NO NO		7, 18 4	
A 232	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 232B	2		E18-B SHLD A232					.25 .25	NO NO			
A 232W			P1-D27 P3-N4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 60 OF 75

CABLE W556

6900079 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 233	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 233B	2		E19-B SHLD A233					.25 .25	NO NO			
A 233W			P1-D28 P3-N5					.15 .19	NO NO		7, 18 4	
A 234	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 234B	2		E19-B SHLD A234					.25 .25	NO NO			
A 234W			P1-D29 P3-N6					.15 .19	NO NO		7, 18 4	
A 235	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 235B	2		E19-B SHLD A235					.25 .25	NO NO			
A 235W			P1-D30 P3-N7					.15 .19	NO NO		7, 18 4	
A 236	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 236B	2		E19-B SHLD A236					.25 .25	NO NO			
A 236W			P1-D31 P3-N8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 61 OF 75

CABLE W556

6900079 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 237	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 237B	2		E19-B SHLD A237					.25 .25	NO NO			
A 237W			P1-D32 P3-P1					.15 .19	NO NO		7, 18 4	
A 238	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 238B	2		E19-B SHLD A238					.25 .25	NO NO			
A 238W			P1-D33 P3-P2					.15 .19	NO NO		7, 18 4	
A 239	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 239B	2		E19-B SHLD A239					.25 .25	NO NO			
A 239W			P1-D34 P3-P3					.15 .19	NO NO		7, 18 4	
A 240	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 240B	2		E19-B SHLD A240					.25 .25	NO NO			
A 240W			P1-D35 P3-P4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 62 OF 75

CABLE W556

6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 241	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 241B	2		E19-B SHLD A241					.25 .25	NO NO			
A 241W			P1-F26 P3-P5					.15 .19	NO NO		7, 18 4	
A 242	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 242B	2		E19-B SHLD A242					.25 .25	NO NO			
A 242W			P1-F27 P3-P6					.15 .19	NO NO		7, 18 4	
A 243	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 243B	2		E19-B SHLD A243					.25 .25	NO NO			
A 243W			P1-F28 P3-P7					.15 .19	NO NO		7, 18 4	
A 244	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 244B	2		E19-B SHLD A244					.25 .25	NO NO			
A 244W			P1-F29 P3-P8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR A D	SHEET 63 OF 75

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CABLE W556

6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 245	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 245B	2		E20-B SHLD A245					.25 .25	NO NO			
A 245W			P1-F30 P3-R1					.15 .19	NO NO		7, 18 4	
A 246	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 246B	2		E20-B SHLD A246					.25 .25	NO NO			
A 246W			P1-F31 P3-R2					.15 .19	NO NO		7, 18 4	
A 247	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 247B	2		E20-B SHLD A247					.25 .25	NO NO			
A 247W			P1-F32 P3-R3					.15 .19	NO NO		7, 18 4	
A 248	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 248B	2		E20-B SHLD A248					.25 .25	NO NO			
A 248W			P1-F33 P3-R4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR *D	SHEET 64 OF 75

MIL 2084 9-65

CABLE W556

6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 249	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8,	
A 249B	2		E20-B SHLD A249					.25 .25	NO NO			
A 249W			P1-F34 P3-R5					.15 .19	NO NO		7, 18 4	
A 250	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 250B	2		E20-B SHLD A250					.25 .25	NO NO			
A 250W			P1-F35 P3-R6					.15 .19	NO NO		7, 18 4	
A 251	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 251B	2		E20-B SHLD A251					.25 .25	NO NO			
A 251W			P1-G26 P3-R7					.15 .19	NO NO		7, 18 4	
A 252	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 252B	2		E20-B SHLD A252					.25 .25	NO NO			
A 252W			P1-G27 P3-R8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR *D	SHEET 65 OF 75

MIL 2084 9-65

CABLE W556

6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 253	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 253B	2		E20-B SHLD A253					.25 .25	NO NO			
A 253W			P1-G28 P3-S1					.15 .19	NO NO		7, 18 4	
A 254	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 254B	2		E20-B SHLD A254					.25 .25	NO NO			
A 254W			P1-G29 P3-S2					.15 .19	NO NO		7, 18 4	
A 255	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 255B	2		E20-B SHLD A255					.25 .25	NO NO			
A 255W			P1-G30 P3-S3					.15 .19	NO NO		7, 18 4	
A 256	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 256B	2		E20-B SHLD A256					.25 .25	NO NO			
A 256W			P1-G31 P3-S4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR *D	SHEET 66 OF 75

MIL 2084 9-65

CABLE W556 6900079 ★D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 257	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 257B	2		E21-B SHLD A257					.25 .25	NO NO			
A 257W			P1-G32 P3-S5					.15 .19	NO NO		7, 18 4	
A 258	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 258B	2		E21-B SHLD A258					.25 .25	NO NO			
A 258W			P1-G33 P3-S6					.15 .19	NO NO		7, 18 4	
A 259	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 259B	2		E21-B SHLD A259					.25 .25	NO NO			
A 259W			P1-G34 P3-S7					.15 .19	NO NO		7, 18 4	
A 260	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 260B	2		E21-B SHLD A260					.25 .25	NO NO			
A 260W			P1-G35 P3-S8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D		SHEET 67 OF 75

MIL 2084 9-65

CABLE W556 6900079 D ★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 261	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 261B	2		E21-B SHLD A261					.25 .25	NO NO			
A 261W			P1-H26 P3-T1					.15 .19	NO NO		7, 18 4	
A 262	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 262B	2		E21-B SHLD A262					.25 .25	NO NO			
A 262W			P1-H27 P3-T2					.15 .19	NO NO		7, 18 4	
A 263	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 263B	2		E21-B SHLD A263					.25 .25	NO NO			
A 263W			P1-H28 P3-T3					.15 .19	NO NO		7, 18 4	
A 264	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 264B	2		E21-B SHLD A264					.25 .25	NO NO			
A 264W			P1-H29 P3-T4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D		SHEET 68 OF 75

MIL 2084 9-65

CABLE W556 6900079 ★D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 265	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 265B	2		E21-B SHLD A265					.25 .25	NO NO			
A 265W			P1-H30 P3-T5					.15 .19	NO NO		7, 18 4	
A 266	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 266B	2		E21-B SHLD A266					.25 .25	NO NO			
A 266W			P1-H31 P3-T6					.15 .19	NO NO		7, 18 4	
A 267	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 267B	2		E21-B SHLD A267					.25 .25	NO NO			
A 267W			P1-H32 P3-T7					.15 .19	NO NO		7, 18 4	
A 268	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 268B	2		E21-B SHLD A268					.25 .25	NO NO			
A 268W			P1-H33 P3-T8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D		SHEET 69 OF 75

MIL 2084 9-65

CABLE W556 6900079 ★D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 269	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 269B	2		E22-B SHLD A269					.25 .25	NO NO			
A 269W			P1-H34 P3-U1					.15 .19	NO NO		7, 18 4	
A 270	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 270B	2		E22-B SHLD A270					.25 .25	NO NO			
A 270W			P1-H35 P3-U2					.15 .19	NO NO		7, 18 4	
A 271	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 271B	2		E22-B SHLD A271					.25 .25	NO NO			
A 271W			P1-K26 P3-U3					.15 .19	NO NO		7, 18 4	
A 272	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 272B	2		E22-B SHLD A272					.25 .25	NO NO			
A 272W			P1-K27 P3-U4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D		SHEET 70 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 273	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 273B	2		E22-B SHLD A273					.25 .25	NO NO			
A 273W			P1-K28 P3-U5					.15 .19	NO NO		7, 18 4	
A 274	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 274B	2		E22-B SHLD A274					.25 .25	NO NO			
A 274W			P1-K29 P3-U6					.15 .19	NO NO		7, 18 4	
A 275	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 275B	2		E22-B SHLD A275					.25 .25	NO NO			
A 275W			P1-K30 P3-U7					.15 .19	NO NO		7, 18 4	
A 276	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 276B	2		E22-B SHLD A276					.25 .25	NO NO			
A 276W			P1-K31 P3-U8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 71 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 BD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 277	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 277B	2		E22-B SHLD A277					.25 .25	NO NO			
A 277W			P1-K32 P3-V1					.15 .19	NO NO		7, 18 4	
A 278	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 278B	2		E22-B SHLD A278					.25 .25	NO NO			
A 278W			P1-K33 P3-V2					.15 .19	NO NO		7, 18 4	
A 279	6		E1-BB E23-B					.25 .25	NO NO			
A 280	6		E2-BB E23-B					.25 .25	NO NO			
A 281	6		E3-BB E23-B					.25 .25	NO NO			
A 282	6		E4-BB E23-B					.25 .25	NO NO			
A 283	6		E5-BB E23-B					.25 .25	NO NO			
A 284	6		E6-BB E23-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR BD	SHEET 72 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 BD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 285	6		E7-BB E23-B					.25 .25	NO NO			
A 286	6		E8-BB E23-B					.25 .25	NO NO			
A 287	6		E9-BB E23-B					.25 .25	NO NO			
A 288	6		E10-BB E23-B					.25 .25	NO NO			
A 289	6		E11-BB E23-B					.25 .25	NO NO			
A 290	6		E12-BB E23-B					.25 .25	NO NO			
A 291	6		E13-BB E24-B					.25 .25	NO NO			
A 292	6		E14-BB E24-B					.25 .25	NO NO			
A 293	6		E15-BB E24-B					.25 .25	NO NO			
A 294	6		F16-BB E24-B					.25 .25	NO NO			
A 295	6		E17-BB E24-B					.25 .25	NO NO			
A 296	6		E18-BB E24-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR BD	SHEET 73 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 BD

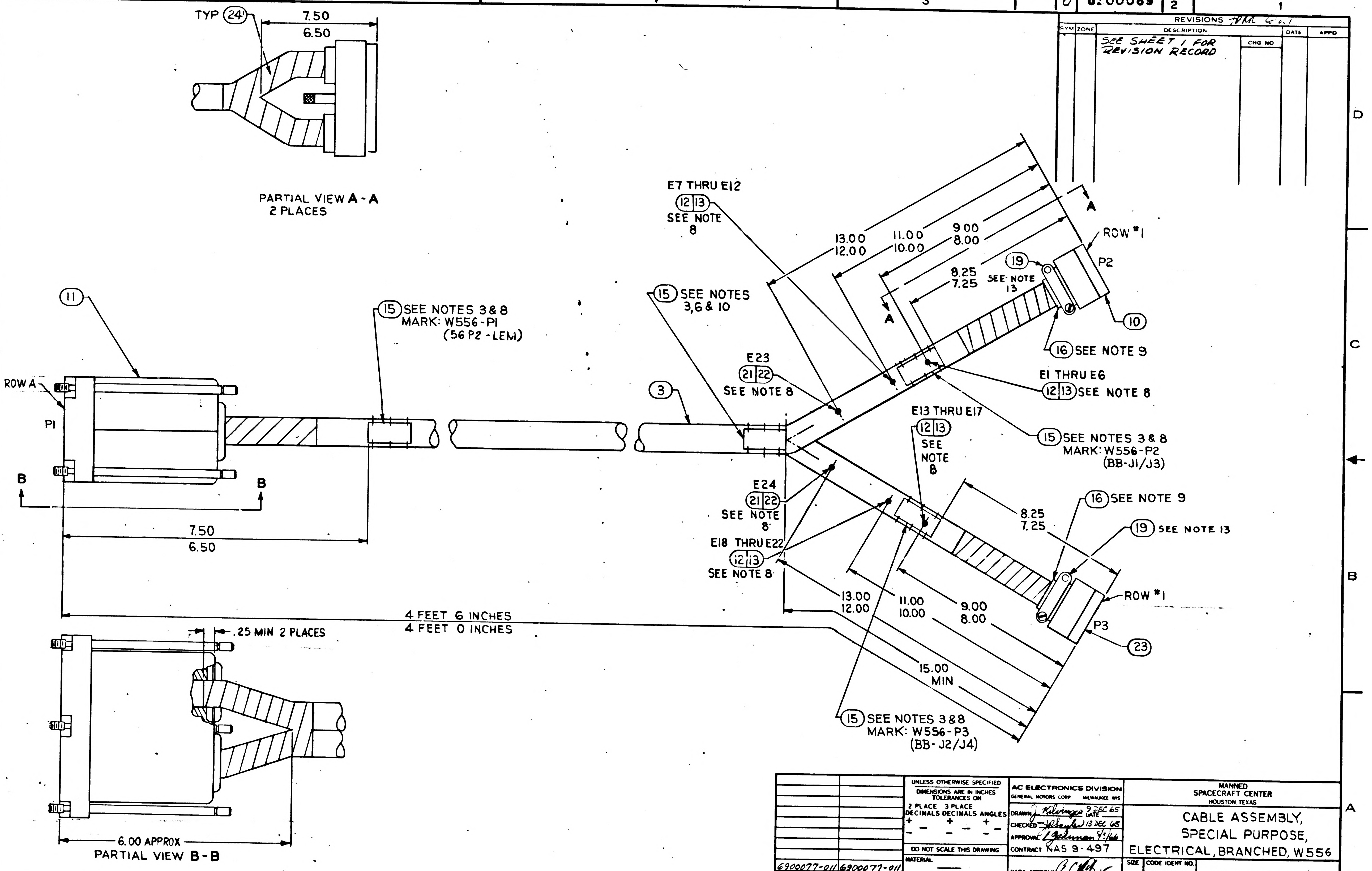
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 297	6		E19-BB E24-B					.25 .25	NO NO			
A 298	6		E20-BB E24-B					.25 .25	NO NO			
A 299	6		E21-BB E24-B					.25 .25	NO NO			
A 300	6		E22-BB E24-B					.25 .25	NO NO			
A 301	5		E23-BB P2-X6					.25 .19	NO NO		 25	
A 302	5		E24-BB P3-X6					.25 .19	NO NO		 25	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR BD	SHEET 74 OF 75

MIL 2084 9-65

0 0100069

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO	DATE	APPD
		SEE SHEET 1 FOR REVISION RECORD			


TYP 24
7.50
6.50
PARTIAL VIEW A-A
2 PLACES
11
ROW A
P1
B
B
7.50
6.50
15 SEE NOTES 3 & 8
MARK: W556-P1
(56 P2-LEM)
3
4 FEET 6 INCHES
4 FEET 0 INCHES
.25 MIN 2 PLACES
6.00 APPROX
PARTIAL VIEW B-B
E7 THRU E12
12 13
SEE NOTE 8
15 SEE NOTES 3, 6 & 10
E23
21 22
SEE NOTE 8
13.00
12.00
11.00
10.00
9.00
8.00
8.25
7.25
19
SEE NOTE 13
A
A
ROW #1
P2
10
16 SEE NOTE 9
E1 THRU E6
12 13 SEE NOTE 8
15 SEE NOTES 3 & 8
MARK: W556-P2
(BB-J1/J3)
E13 THRU E17
12 13
SEE NOTE 8
E24
21 22
SEE NOTE 8
E18 THRU E22
12 13
SEE NOTE 8
16 SEE NOTE 9
19 SEE NOTE 13
8.25
7.25
ROW #1
P3
23
13.00
12.00
11.00
10.00
9.00
8.00
15.00
MIN
15 SEE NOTES 3 & 8
MARK: W556-P3
(BB-J2/J4)

6900077-011	6900077-011	
NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± —
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN J. Kilvinger DATE 9 DEC 65
CHECKED 13 DEC 65
APPROVAL 9/3/66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 5-10-

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W556

SIZE D
CODE IDENT NO. 99974
6900079
SCALE NONE
SHEET 75 OF 75

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	LTR	DESCRIPTION	DATE	APPROVED
6900077-011	6900077-011	A	REPLACES REV (+) WITH CHANGE PER MXC 209930	16 MAR 66	
		B	REVISED PER MXC 210436	31-MAR-66	B. P7
		C	REVISED PER MXC 211613	22 APR 66	RW RWH
		Ⓜ D	INITIAL RELEASE CLASS A PER TDRR 28601	3-MAY 66	EF
		Ⓜ E	REVISED PER TDRR 30477	11 AUG 66	JI R.W.

REV		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D
SHEET		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
REV STATUS OF SHEETS	REV			E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	SHEET			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN J. Kilvinger 9 DEC 65 DAY MO YR
CHECKER 13 DEC 65
ENGINEER 14 DEC 65
APPROVAL 5/3/66
CONTR NO. NAS 9-497

NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W556

SIZE A | CODE IDENT. NO 99974 | 6900079
SCALE NONE | SHEET 1 OF 75

MIL 1377A6 12-65

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
48	D																
49	D																
50	D																
51	D																
52	D																
53	D																
54	D																
55	D																
56	D																
57	D																
58	D																
59	D																
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67	D																
68	D																
69	D																
70	D																
71	D																
72	D																
73	D																
74	D																
75	E																

SIZE A | CODE IDENT. NO. 99974 | 6900079
SCALE NONE | REV LTR ~~D~~ E | SHEET 2 OF 75

MIL 1377A3 9-65

NOTE NUMBER

GENERAL NOTES

DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER -
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 17.

4 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

5 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

7 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - FROM END SHIELD
B - TO END SHIELD
W - WHITE

8 MARK REFERENCE DESIGNATIONS SHOWN PER ND1002019, HOT IMPRESSION STAMPING, USING .12 BLACK CHARACTERS CENTRALIZED.

9 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 16 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP. USE ONLY IF REQUIRED.

10 SERIALIZE PER ND1002023.

11 LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES

12 ASSEMBLE PER ND1002032

NOTE NUMBER

GENERAL NOTES

DESCRIPTION

13 AT ASSEMBLY OF ITEM 19 REMOVE 4 SELF-LOCKING NUTS SECURING LOCATING PINS TO CONNECTOR AND DISCARD. ATTACH ITEM 19 USING LOCATING PINS.

14 SPOT TIE GROUPS OF LEADS ADJACENT TO INTERNAL CLAMP (CONNECTOR SIDE). USE ITEM 24 TO SHAPE WIRE BUNDLE IN CLAMP. USE ITEM 16 TO SECURE WIRE BUNDLE IN CLAMP, IF REQUIRED.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900079-001	WIRE ND1002181 TYPE 1 CLASS 4 22 AWG WHT JKT WHT 1048 FT TOTAL LENGTH
	2	1	6900079-002	WIRE ND1002181 TYPE 1 CLASS 1 24 AWG WHT 131 FT TOTAL LENGTH
	3	1	6900079-006	ZIPPER TUBING PER ND1002155 TYPE 4 GREY 2.0 DIA 4 FT TOTAL LENGTH 2 CHANNEL
4	4	262	1016369-421	CONTACT, SOCKET
	5	1	6900079-005	WIRE ND1002181 TYPE 1 CLASS 1 16 AWG WHT 2 FT TOTAL LENGTH
	6	1	6900079-004	WIRE ND1002181 TYPE 1 CLASS 1 20 AWG WHT 8 FT TOTAL LENGTH
4	7	262	1897300-002	CONTACT, SPRING SOCKET
4	8	262	1010763-002	SOLDER SLEEVE
4	9	524	1010490-232	INSULATION SLEEVING SHRINK FIT
	10	1	2901434-011	CONNECTOR
4	11	1	6900050-011	CONNECTOR
4	12	22	1016006-002	SPLICE REDUCER
4	13	22	1010490-258	INSULATION SLEEVING SHRINK FIT
	14		1015902-003	DELETED
4	15	4	1016128-021	BAND IDENTIFICATION

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	16	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A, CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	17	AR	MIL-T-7138 TYPE P CLASS 2,BLK	LACING TAPE
4	18	262	1015864-232	INSULATION SLEEVING, ELECT.
4	19	2	1897391	CLAMP, CABLE DUAL ENTRY
	20		1010490-166	DELETED
4	21	2	1016006-004	SPLICE REDUCER
4	22	2	1010490-342	INSULATION SLEEVING SHRINK FIT
4	23	1	2901434-021 ~~1897336-002~~	CONNECTOR
	24	AR	MIL-I-15126 TYPE ACT	INSULATION TAPE ELEC PRESSURE SENSITIVE THERMO SETTING ADHESIVE, .75 + OR -.03 WIDE (ES2716 TYPE C)
	25	2	1016369-721	CONTACT, SOCKET

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	3	1			4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A	3B	2		E1-B SHLD A3				.25 .25	NO NO			
A	3W			P1-A3 P2-A5				.15 .19	NO NO		7, 18 4	
A	4	1			4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A	4B	2		E1-B SHLD A4				.25 .25	NO NO			
A	4W			P1-A4 P2-A6				.15 .19	NO NO		7, 18 4	
A	5	1			4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A	5B	2		E1-B SHLD A5				.25 .25	NO NO			
A	5W			P1-A5 P2-B1				.15 .19	NO NO		7, 18 4	
A	6	1			4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A	6B	2		E1-B SHLD A6				.25 .25	NO NO			
A	6W			P1-A6 P2-B2				.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 7 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	7	1			4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A	7B	2		E1-B SHLD A7				.25 .25	NO NO			
A	7W			P1-A7 P2-B3				.15 .19	NO NO		7, 18 4	
A	8	1			4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A	8B	2		E1-B SHLD A8				.25 .25	NO NO			
A	8W			P1-A8 P2-B4				.15 .19	NO NO		7, 18 4	
A	9	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	9B	2		E1-B SHLD A9				.25 .25	NO NO			
A	9W			P1-A9 P2-B5				.15 .19	NO NO		7, 18 4	
A	10	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	10B	2		E1-B SHLD A10				.25 .25	NO NO			
A	10W			P1-A10 P2-B6				.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 8 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	11	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	11B	2		E1-B SHLD A11				.25 .25	NO NO			
A	11W			P1-A11 P2-B7				.15 .19	NO NO		7, 18 4	
A	12	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	12B	2		E1-B SHLD A12				.25 .25	NO NO			
A	12W			P1-A12 P2-B8				.15 .19	NO NO		7, 18 4	
A	13	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	13B	2		E1-B SHLD A13				.25 .25	NO NO			
A	13W			P1-A13 P2-C1				.15 .19	NO NO		7, 18 4	
A	14	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	14B	2		E1-B SHLD A14				.25 .25	NO NO			
A	14W			P1-A14 P2-C2				.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 9 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	15	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	15B	2		E2-B SHLD A15				.25 .25	NO NO			
A	15W			P1-A15 P2-C3				.15 .19	NO NO		7, 18 4	
A	16	1			4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A	16B	2		E2-B SHLD A16				.25 .25	NO NO			
A	16W			P1-B1 P2-C4				.15 .19	NO NO		7, 18 4	
A	17	1			5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A	17B	2		E2-B SHLD A17				.25 .25	NO NO			
A	17W			P1-B2 P2-C5				.15 .19	NO NO		7, 18 4	
A	18	1			5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A	18B	2		E2-B SHLD A18				.25 .25				
A	18W			P1-B3 P2-C6				.15 .19			7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 10 OF 75

MIL 2084 9.65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-B4 P2-C7					.15 .19	NO NO		7, 18 4	
A 20	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 20B	2		E2-B SHLD A20					.25 .25	NO NO			
A 20W			P1-B5 P2-C8					.15 .19	NO NO		7, 18 4	
A 21	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 21B	2		E2-B SHLD A21					.25 .25	NO NO			
A 21W			P1-B6 P2-D1					.15 .19	NO NO		7, 18 4	
A 22	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 22B	2		E2-B SHLD A22					.25 .25	NO NO			
A 22W			P1-B7 P2-D2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 11 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 23B	2		E2-B SHLD A23					.25 .25	NO NO			
A 23W			P1-B8 P2-D3					.15 .19	NO NO		7, 18 4	
A 24	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 24B	2		E2-B SHLD A24					.25 .25	NO NO			
A 24W			P1-B9 P2-D4					.15 .19	NO NO		7, 18 4	
A 25	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 25B	2		E2-B SHLD A25					.25 .25	NO NO			
A 25W			P1-B10 P2-D5					.15 .19	NO NO		7, 18 4	
A 26	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 26B	2		E2-B SHLD A26					.25 .25	NO NO			
A 26W			P1-B11 P2-D6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 12 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 27B	2		E3-B SHLD A27					.25 .25	NO NO			
A 27W			P1-B12 P2-D7					.15 .19	NO NO		7, 18 4	
A 28	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 28B	2		E3-B SHLD A28					.25 .25	NO NO			
A 28W			P1-B13 P2-D6					.15 .19	NO NO		7, 18 4	
A 29	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 29B	2		E3 SHLD A29					.25 .25	NO NO			
A 29W			P1-B14 P2-E1					.15 .19	NO NO		7, 18 4	
A 30	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 30B	2		E3 SHLD A30					.25 .25	NO NO			
A 30W			P1-B15 P2-E2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 13 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31	1				6.75 6.75	6.50 6.50				8,7 A,6A		
A 31B	2		E3 SHLD A31					.25 .25	NO NO			
A 31W			P1-C1 P2-E3					.15 .19	NO NO		7, 18 4	
A 32	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 32B	2		E3 SHLD A32					.25 .25	NO NO			
A 32W			P1-C2 P2-E4					.15 .19	NO NO		7, 18 4	
A 33	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 33B	2		E3-B SHLD A33					.25 .25	NO NO			
A 33W			P1-C3 P2-E5					.15 .19	NO NO		7, 18 4	
A 34	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 34B	2		E3-B SHLD A34					.25 .25	NO NO			
A 34W			P1-C4 P2-E6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 14 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 35	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 35B	2		E3-8 SHLD A35					.25 .25	NO NO			
A 35W			P1-C5 P2-E7					.15 .19	NO NO		7, 18 4	
A 36	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 36B	2		E3-8 SHLD A36					.25 .25	NO NO			
A 36W			P1-C6 P2-E8					.15 .19	NO NO		7, 18 4	
A 37	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 37B	2		E3-8 SHLD A37					.25 .25	NO NO			
A 37W			P1-C7 P2-F1					.15 .19	NO NO		7, 18 4	
A 38	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 38B	2		E3-8 SHLD A38					.25 .25	NO NO			
A 38W			P1-C8 P2-F2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR D★ | SHEET 15 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 39	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 39B	2		E4-8 SHLD A39					.25 .25	NO NO			
A 39W			P1-C9 P2-F3					.15 .19	NO NO		7, 18 4	
A 40	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 40B	2		E4-8 SHLD A40					.25 .25	NO NO			
A 40W			P1-C10 P2-F4					.15 .19	NO NO		7, 18 4	
A 41	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 41B	2		E4-8 SHLD A41					.25 .25	NO NO			
A 41W			P1-C11 P2-F5					.15 .19	NO NO		7, 18 4	
A 42	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 42B	2		E4-8 SHLD A42					.25 .25	NO NO			
A 42W			P1-C12 P2-F6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR D★ | SHEET 16 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 43B	2		E4-8 SHLD A43					.25 .25	NO NO			
A 43W			P1-C13 P2-F7					.15 .19	NO NO		7, 18 4	
A 44	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 44B	2		E4-8 SHLD A44					.25 .25	NO NO			
A 44W			P1-C14 P2-F8					.15 .19	NO NO		7, 18 4	
A 45	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 45B	2		E4-8 SHLD A45					.25 .25	NO NO			
A 45W			P1-C15 P2-G1					.15 .19	NO NO		7, 18 4	
A 46	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 46B	2		E4-8 SHLD A46					.25 .25	NO NO			
A 46W			P1-D1 P2-G2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR D★ | SHEET 17 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 47B	2		E4-8 SHLD A47					.25 .25	NO NO			
A 47W			P1-D2 P2-G3					.15 .19	NO NO		7, 18 4	
A 48	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 48B	2		E4-8 SHLD A48					.25 .25	NO NO			
A 48W			P1-D3 P2-G4					.15 .19	NO NO		7, 18 4	
A 49	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 49B	2		E4-8 SHLD A49					.25 .25	NO NO			
A 49W			P1-D4 P2-G5					.15 .19	NO NO		7, 18 4	
A 50	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 50B	2		E4-8 SHLD A50					.25 .25	NO NO			
A 50W			P1-D5 P2-G6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR D★ | SHEET 18 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 51	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 51B	2		E5-B SHLD A51					.25 .25	NO NO			
A 51W			P1-D6 P2-G7					.15 .19	NO NO		7, 18 4	
A 52	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 52B	2		E5-B SHLD A52					.25 .25	NO NO			
A 52W			P1-D7 P2-G8					.15 .19	NO NO		7, 18 4	
A 53	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 53B	2		E5-B SHLD A53					.25 .25	NO NO			
A 53W			P1-D8 P2-H1					.15 .19	NO NO		7, 18 4	
A 54	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 54B	2		E5-B SHLD A54					.25 .25	NO NO			
A 54W			P1-D9 P2-H2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 19 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 55	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 55B	2		E5-B SHLD A55					.25 .25	NO NO			
A 55W			P1-D10 P2-H3					.15 .19	NO NO		7, 18 4	
A 56	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 56B	2		E5-B SHLD A56					.25 .25	NO NO			
A 56W			P1-D11 P2-H4					.15 .19	NO NO		7, 18 4	
A 57	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 57B	2		E5-B SHLD A57					.25 .25	NO NO			
A 57W			P1-D12 P2-H5					.15 .19	NO NO		7, 18 4	
A 58	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 58B	2		E5-B SHLD A58					.25 .25	NO NO			
A 58W			P1-D13 P2-H6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 20 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 59	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 59B	2		E5-B SHLD A59					.25 .25	NO NO			
A 59W			P1-D14 P2-H7					.15 .19	NO NO		7, 18 4	
A 60	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 60B	2		E5-B SHLD A60					.25 .25	NO NO			
A 60W			P1-D15 P2-H8					.15 .19	NO NO		7, 18 4	
A 61	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 61B	2		E5-B SHLD A61					.25 .25	NO NO			
A 61W			P1-F1 P2-J1					.15 .19	NO NO		7, 18 4	
A 62	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 62B	2		E5-B SHLD A62					.25 .25	NO NO			
A 62W			P1-F2 P2-J2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 21 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 63B	2		E6-B SHLD A63					.25 .25	NO NO			
A 63W			P1-F3 P2-J3					.15 .19	NO NO		7, 18 4	
A 64	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 64B	2		E6-B SHLD A64					.25 .25	NO NO			
A 64W			P1-F4 P2-J4					.15 .19	NO NO		7, 18 4	
A 65	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 65B	2		E6-B SHLD A65					.25 .25	NO NO			
A 65W			P1-F5 P2-J5					.15 .19	NO NO		7, 18 4	
A 66	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 66B	2		E6-B SHLD A66					.25 .25	NO NO			
A 66W			P1-F6 P2-J6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 22 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 67	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 67B	2		E6-B SHLD A67					.25 .25	NO NO			
A 67W			P1-F7 P2-J7					.15 .19	NO NO		7, 18 4	
A 68	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 68B	2		E6-B SHLD A68					.25 .25	NO NO			
A 68W			P1-F8 P2-J8					.15 .19	NO NO		7, 18 4	
A 69	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 69B	2		E6-B SHLD A69					.25 .25	NO NO			
A 69W			P1-F9 P2-K1					.15 .19	NO NO		7, 18 4	
A 70	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 70B	2		E6-B SHLD A70					.25 .25	NO NO			
A 70W			P1-F10 P2-K2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 23 OF 75

MIL 2084 9 65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 71	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 71B	2		E6-B SHLD A71					.25 .25	NO NO			
A 71W			P1-F11 P2-K3					.15 .19	NO NO		7, 18 4	
A 72	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 72B	2		E6-B SHLD A72					.25 .25	NO NO			
A 72W			P1-F12 P2-K6					.15 .19	NO NO		7, 18 4	
A 73	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 73B	2		E6-B SHLD A73					.25 .25	NO NO			
A 73W			P1-F13 P2-K7					.15 .19	NO NO		7, 18 4	
A 74	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 74B	2		E6-B SHLD A74					.25 .25	NO NO			
A 74W			P1-F14 P2-K6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 24 OF 75

MIL 2084 9 65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 75B	2		E7-B SHLD A75					.25 .25	NO NO			
A 75W			P1-F15 P2-L1					.15 .19	NO NO		7, 18 4	
A 76	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 76B	2		E7-B SHLD A76					.25 .25	NO NO			
A 76W			P1-G1 P2-L2					.15 .19	NO NO		7, 18 4	
A 77	1				7.75 6.75	7.00 6.00				8,7 A,6A	9 8, 9	
A 77B	2		E7-B SHLD A77					.25 .25	NO NO			
A 77W			P1-G2 P2-L7					.15 .19	NO NO		7, 18 4	
A 78	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 78B	2		E7-B SHLD A78					.25 .25	NO NO			
A 78W			P1-G3 P2-L6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 25 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 79B	2		E7-B SHLD A79					.25 .25	NO NO			
A 79W			P1-G4 P2-M1					.15 .19	NO NO		7, 18 4	
A 80	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 80B	2		E7-B SHLD A80					.25 .25	NO NO			
A 80W			P1-G5 P2-M2					.15 .19	NO NO		7, 18 4	
A 81	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 81B	2		E7-B SHLD A81					.25 .25	NO NO			
A 81W			P1-G6 P2-M3					.15 .19	NO NO		7, 18 4	
A 82	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 82B	2		E7-B SHLD A82					.25 .25	NO NO			
A 82W			P1-G7 P2-M6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 26 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 83	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 83B	2		E7-8 SHLD A83					.25 .25	NO NO			
A 83W			P1-G8 P2-M7					.15 .19	NO NO		7, 18 4	
A 84	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 84B	2		E7-8 SHLD A84					.25 .25	NO NO			
A 84W			P1-G9 P2-M8					.15 .19	NO NO		7, 18 4	
A 85	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 85B	2		E7-8 SHLD A85					.25 .25	NO NO			
A 85W			P1-G10 P2-N1					.15 .19	NO NO		7, 18 4	
A 86	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 86B	2		E7-8 SHLD A86					.25 .25	NO NO			
A 86W			P1-G11 P2-N2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 27 OF 75

MIL 2084 9 65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 87B	2		E8-8 SHLD A87					.25 .25	NO NO			
A 87W			P1-G12 P2-N3					.15 .19	NO NO		7, 18 4	
A 88	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 88B	2		E8-8 SHLD A88					.25 .25	NO NO			
A 88W			P1-G13 P2-N4					.15 .19	NO NO		7, 18 4	
A 89	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 89B	2		E8-8 SHLD A89					.25 .25	NO NO			
A 89W			P1-G14 P2-N5					.15 .19	NO NO		7, 18 4	
A 90	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 90B	2		E8-8 SHLD A90					.25 .25	NO NO			
A 90W			P1-G15 P2-N6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 28 OF 75

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CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 91B	2		E8-8 SHLD A91					.25 .25	NO NO			
A 91W			P1-H1 P2-N7					.15 .19	NO NO		7, 18 4	
A 92	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 92B	2		E8-8 SHLD A92					.25 .25	NO NO			
A 92W			P1-H2 P2-N8					.15 .19	NO NO		7, 18 4	
A 93	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 93B	2		E8-8 SHLD A93					.25 .25	NO NO			
A 93W			P1-H3 P2-P1					.15 .19	NO NO		7, 18 4	
A 94	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 94B	2		E8-8 SHLD A94					.25 .25	NO NO			
A 94W			P1-H4 P2-P2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 29 OF 75

MIL 2084 9 65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 95B	2		E8-8 SHLD A95					.25 .25	NO NO			
A 95W			P1-H5 P2-P3					.15 .19	NO NO		7, 18 4	
A 96	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 96B	2		E8-8 SHLD A96					.25 .25	NO NO			
A 96W			P1-H6 P2-P4					.15 .19	NO NO		7, 18 4	
A 97	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 97B	2		E8-8 SHLD A97					.25 .25	NO NO			
A 97W			P1-H7 P2-P5					.15 .19	NO NO		7, 18 4	
A 98	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 98B	2		E8-8 SHLD A98					.25 .25	NO NO			
A 98W			P1-H8 P2-P6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR D★ | SHEET 30 OF 75

MIL 2084 9 65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 99	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 99B	2		E9-8 SHLD A99					.25 .25	NO NO			
A 99W			P1-H9 P2-P7					.15 .19	NO NO		7, 18 4	
A 100	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 100B	2		E9-8 SHLD A100					.25 .25	NO NO			
A 100W			P1-H10 P2-P8					.15 .19	NO NO		7, 18 4	
A 101	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 101B	2		E9-8 SHLD A101					.25 .25	NO NO			
A 101W			P1-H11 P2-R1					.15 .19	NO NO		7, 18 4	
A 102	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 102B	2		E9-8 SHLD A102					.25 .25	NO NO			
A 102W			P1-H12 P2-R2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 31 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 103B	2		E9-8 SHLD A103					.25 .25	NO NO			
A 103W			P1-H13 P2-R3					.15 .19	NO NO		7, 18 4	
A 104	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 104B	2		E9-8 SHLD A104					.25 .25	NO NO			
A 104W			P1-H14 P2-R4					.15 .19	NO NO		7, 18 4	
A 105	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 105B	2		E9-8 SHLD A105					.25 .25	NO NO			
A 105W			P1-H15 P2-R5					.15 .19	NO NO		7, 18 4	
A 108	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 108B	2		E9-8 SHLD A108					.25 .25	NO NO			
A 108W			P1-K3 P2-R8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 32 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 109B	2		E9-8 SHLD A109					.25 .25	NO NO			
A 109W			P1-K4 P2-S1					.15 .19	NO NO		7, 18 4	
A 110	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 110B	2		E9-8 SHLD A110					.25 .25	NO NO			
A 110W			P1-K5 P2-S2					.15 .19	NO NO		7, 18 4	
A 111	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 111B	2		E9-8 SHLD A111					.25 .25	NO NO			
A 111W			P1-K6 P2-S3					.15 .19	NO NO		7, 18 4	
A 112	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 112B	2		E9-8 SHLD A112					.25 .25	NO NO			
A 112W			P1-K7 P2-S4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 33 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 113	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 113B	2		E10-8 SHLD A113					.25 .25	NO NO			
A 113W			P1-K8 P2-S5					.15 .19	NO NO		7, 18 4	
A 114	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 114B	2		E10-8 SHLD A114					.25 .25	NO NO			
A 114W			P1-K9 P2-S6					.15 .19	NO NO		7, 18 4	
A 115	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 115B	2		E10-8 SHLD A115					.25 .25	NO NO			
A 115W			P1-K10 P2-S7					.15 .19	NO NO		7, 18 4	
A 116	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 116B	2		E10-8 SHLD A116					.25 .25	NO NO			
A 116W			P1-K11 P2-S8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 34 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 117	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 117B	2		E10-8 SHLD A117					.25 .25	NO NO			
A 117W			P1-K12 P2-11					.15 .19	NO NO		7, 18 4	
A 118	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 118B	2		E10-8 SHLD A118					.25 .25	NO NO			
A 118W			P1-K13 P2-T2					.15 .19	NO NO		7, 18 4	
A 119	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 119B	2		E10-8 SHLD A119					.25 .25	NO NO			
A 119W			P1-K14 P2-T3					.15 .19	NO NO		7, 18 4	
A 120	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 120B	2		E10-8 SHLD A120					.25 .25	NO NO			
A 120W			P1-K15 P2-T4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 126B	2		E10-8 SHLD A126					.25 .25	NO NO			
A 126W			P1-A21 P2-U2					.15 .19	NO NO		7, 18 4	
A 127	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 127B	2		E10-8 SHLD A127					.25 .25	NO NO			
A 127W			P1-A22 P2-U3					.15 .19	NO NO		7, 18 4	
A 128	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 128B	2		E10-8 SHLD A128					.25 .25	NO NO			
A 128W			P1-A23 P2-U4					.15 .19	NO NO		7, 18 4	
A 129	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 129B	2		E10-8 SHLD A129					.25 .25	NO NO			
A 129W			P1-A24 P2-U5					.15 .19	NO NO		7, 18 4	

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CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 130	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 130B	2		E11-8 SHLD A130					.25 .25	NO NO			
A 130W			P1-A25 P2-U6					.15 .19	NO NO		7, 18 4	
A 131	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 131B	2		E11-8 SHLD A131					.25 .25	NO NO			
A 131W			P1-B16 P2-U7					.15 .19	NO NO		7, 18 4	
A 132	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 132B	2		E11-8 SHLD A132					.25 .25	NO NO			
A 132W			P1-B17 P2-U6					.15 .19	NO NO		7, 18 4	
A 133	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 133B	2		E11-8 SHLD A133					.25 .25	NO NO			
A 133W			P1-B18 P2-V1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 134	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 134B	2		E11-8 SHLD A134					.25 .25	NO NO			
A 134W			P1-B19 P2-V2					.15 .19	NO NO		7, 18 4	
A 135	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 135B	2		E11-8 SHLD A135					.25 .25	NO NO			
A 135W			P1-B20 P2-V3					.15 .19	NO NO		7, 18 4	
A 136	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 136B	2		E11-8 SHLD A136					.25 .25	NO NO			
A 136W			P1-B21 P2-V4					.15 .19	NO NO		7, 18 4	
A 137	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 137B	2		E11-8 SHLD A137					.25 .25	NO NO			
A 137W			P1-B22 P2-V5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 138	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 138B	2		E11-B SHLD A138					.25 .25	NO NO			
A 138W			P1-B23 P2-V6					.15 .19	NO NO		7, 18 4	
A 139	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 139B	2		E11-B SHLD A139					.25 .25	NO NO			
A 139W			P1-B24 P2-V7					.15 .19	NO NO		7, 18 4	
A 140	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 140B	2		E11-B SHLD A140					.25 .25	NO NO			
A 140W			P1-B25 P2-V8					.15 .19	NO NO		7, 18 4	
A 141	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 141B	2		E11-B SHLD A141					.25 .25	NO NO			
A 141W			P1-C16 P2-W1					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR D★ | SHEET 39 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 142	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 142B	2		E12-B SHLD A142					.25 .25	NO NO			
A 142W			P1-C17 P2-W2					.15 .19	NO NO		7, 18 4	
A 143	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 143B	2		E12-B SHLD A143					.25 .25	NO NO			
A 143W			P1-C18 P2-W3					.15 .19	NO NO		7, 18 4	
A 144	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 144B	2		E12-B SHLD A144					.25 .25	NO NO			
A 144W			P1-C19 P2-W4					.15 .19	NO NO		7, 18 4	
A 145	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 145B	2		E12-B SHLD A145					.25 .25	NO NO			
A 145W			P1-C20 P2-W5					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR D★ | SHEET 40 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 146	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 146B	2		E12-B SHLD A146					.25 .25	NO NO			
A 146W			P1-C21 P2-W6					.15 .19	NO NO		7, 18 4	
A 147	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 147B	2		E12-B SHLD A147					.25 .25	NO NO			
A 147W			P1-C22 P2-W7					.15 .19	NO NO		7, 18 4	
A 148	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 148B	2		E12-B SHLD A148					.25 .25	NO NO			
A 148W			P1-C23 P2-W8					.15 .19	NO NO		7, 18 4	
A 149	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 149B	2		E12-B SHLD A149					.25 .25	NO NO			
A 149W			P1-C24 P2-X3					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR D★ | SHEET 41 OF 75

CABLE W556 6900079 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 150	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 150B	2		E12-B SHLD A150					.25 .25	NO NO			
A 150W			P1-C25 P2-X4					.15 .19	NO NO		7, 18 4	
A 151	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 151B	2		E12-B SHLD A151					.25 .25	NO NO			
A 151W			P1-D16 P2-X5					.15 .19	NO NO		7, 18 4	
A 152	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 152B	2		E22-B SHLD A152					.25 .25	NO NO			
A 152W			P1-D17 P3-X5					.15 .19	NO NO		7, 18 4	
A 153	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 153B	2		E13-B SHLD A153					.25 .25	NO NO			
A 153W			P1-D18 P3-A3					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079
SCALE-NONE | REV LTR E | SHEET 42 OF 75

CABLE W556 6900079 A D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 154B	2		E13-8 SHLD A154					.25 .25	NO NO			
A 154W			P1-D19 P3-A4					.15 .19	NO NO		7, 18 4	
A 155	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 155B	2		E13-8 SHLD A155					.25 .25	NO NO			
A 155W			P1-D20 P3-A5					.15 .19	NO NO		7, 18 4	
A 156	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 156B	2		E13-8 SHLD A156					.25 .25				
A 156W			P1-D21 P3-A6					.15 .19			7, 18 4	
A 157	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 157B	2		E13-8 SHLD A157					.25 .25				
A 157W			P1-D22 P3-B1					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR A D	SHEET 43 OF 75

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CABLE W556 6900079 A D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 158	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 158B	2		E13-8 SHLD A158					.25 .25				
A 158W			P1-D23 P3-B2					.15 .19			7, 18 4	
A 159	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 159B	2		E13-8 SHLD A159					.25 .25				
A 159W			P1-D24 P3-B3					.15 .19			7, 18 4	
A 160	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 160B	2		E13-8 SHLD A160					.25 .25				
A 160W			P1-D25 P3-B4					.15 .19			7, 18 4	
A 161	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 161B	2		E13-8 SHLD A161					.25 .25				
A 161W			P1-F16 P3-B5					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR A D	SHEET 44 OF 75

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CABLE W556 6900079 A D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 162	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 162B	2		E13-8 SHLD A162					.25 .25				
A 162W			P1-F17 P3-B6					.15 .19			7, 18 4	
A 163	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 163B	2		E13-8 SHLD A163					.25 .25				
A 163W			P1-F18 P3-B7					.15 .19			7, 18 4	
A 164	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 164B	2		E13-8 SHLD A164					.25 .25	NO NO			
A 164W			P1-F19 P3-B8					.15 .19	NO NO		7, 18 4	
A 165	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 165B	2		E13-8 SHLD A165					.25 .25	NO NO			
A 165W			P1-F20 P3-C1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR A D	SHEET 45 OF 75

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CABLE W556 6900079 A D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 166	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 166B	2		E14-8 SHLD A166					.25 .25	NO NO			
A 166W			P1-F21 P3-C2					.15 .19	NO NO		7, 18 4	
A 167	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 167B	2		E14-8 SHLD A167					.25 .25	NO NO			
A 167W			P1-F22 P3-C3					.15 .19	NO NO		7, 18 4	
A 168	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 168B	2		E14-8 SHLD A168					.25 .25	NO NO			
A 168W			P1-F23 P3-C4					.15 .19	NO NO		7, 18 4	
A 169	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 169B	2		E14-8 SHLD A169					.25 .25	NO NO			
A 169W			P1-F24 P3-C5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR A D	SHEET 46 OF 75

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CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 170	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 170B	2		E14-B SHLD A170					.25 .25	NO NO			
A 170W			P1-F25 P3-C6					.15 .19	NO NO		7, 18 4	
A 171	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 171B	2		E14-B SHLD A171					.25 .25	NO NO			
A 171W			P1-G16 P3-C7					.15 .19	NO NO		7, 18 4	
A 172	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 172B	2		E14-B SHLD A172					.25 .25	NO NO			
A 172W			P1-G17 P3-C8					.15 .19	NO NO		7, 18 4	
A 173	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 173B	2		E14-B SHLD A173					.25 .25	NO NO			
A 173W			P1-G18 P3-D1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	AD	SHEET 47 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 174	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 174B	2		E14-B SHLD A174					.25 .25	NO NO			
A 174W			P1-G19 P3-D2					.15 .19	NO NO		7, 18 4	
A 175	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 175B	2		E14-B SHLD A175					.25 .25	NO NO			
A 175W			P1-G20 P3-D3					.15 .19	NO NO		7, 18 4	
A 176	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 176B	2		E14-B SHLD A176					.25 .25	NO NO			
A 176W			P1-G21 P3-D4					.15 .19	NO NO		7, 18 4	
A 177	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 177B	2		E14-B SHLD A177					.25 .25	NO NO			
A 177W			P1-G22 P3-D5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	AD	SHEET 48 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 178	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 178B	2		E15-B SHLD A178					.25 .25	NO NO			
A 178W			P1-G23 P3-D6					.15 .19	NO NO		7, 18 4	
A 179	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 179B	2		E15-B SHLD A179					.25 .25	NO NO			
A 179W			P1-G24 P3-D7					.15 .19	NO NO		7, 18 4	
A 180	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 180B	2		E15-B SHLD A180					.25 .25	NO NO			
A 180W			P1-G25 P3-D8					.15 .19	NO NO		7, 18 4	
A 181	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 181B	2		E15-B SHLD A181					.25 .25	NO NO			
A 181W			P1-H16 P3-F1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	AD	SHEET 49 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 182	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 182B	2		E15-B SHLD A182					.25 .25	NO NO			
A 182W			P1-H17 P3-F2					.15 .19	NO NO		7, 18 4	
A 183	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 183B	2		E15-B SHLD A183					.25 .25	NO NO			
A 183W			P1-H18 P3-F3					.15 .19	NO NO		7, 18 4	
A 184	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 184B	2		E15-B SHLD A185					.25 .25	NO NO			
A 184W			P1-H19 P3-F4					.15 .19	NO NO		7, 18 4	
A 185	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 185B	2		E15-B SHLD A185					.25 .25	NO NO			
A 185W			P1-H20 P3-F5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	AD	SHEET 50 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 186	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 186B	2		E15-B SHLD A186					.25 .25	NO NO			
A 186W			P1-H21 P3-F6					.15 .19	NO NO		7, 18 4	
A 187	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 187B	2		E15-B SHLD A186					.25 .25	NO NO			
A 187W			P1-H22 P3-F7					.15 .19	NO NO		7, 18 4	
A 188	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 188B	2		E15-B SHLD A188					.25 .25	NO NO			
A 188W			P1-H23 P3-F6					.15 .19	NO NO		7, 18 4	
A 189	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 189B	2		E15-B SHLD A189					.25 .25	NO NO			
A 189W			P1-H24 P3-G1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 51 OF 7

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 190	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 190B	2		E16-B SHLD A190					.25 .25	NO NO			
A 190W			P1-H25 P3-G2					.15 .19	NO NO		7, 18 4	
A 196	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 196B	2		E16-B SHLD A196					.25 .25	NO NO			
A 196W			P1-K21 P3-G8					.15 .19	NO NO		7, 18 4	
A 197	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 197B	2		E16-B SHLD A197					.25 .25	NO NO			
A 197W			P1-K22 P3-H1					.15 .19	NO NO		7, 18 4	
A 198	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 198B	2		E16-B SHLD A198					.25 .25	NO NO			
A 198W			P1-K23 P3-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 52 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 199B	2		E16-B SHLD A199					.25 .25	NO NO			
A 199W			P1-K24 P3-H3					.15 .19	NO NO		7, 18 4	
A 200	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 200B	2		E16-B SHLD A200					.25 .25	NO NO			
A 200W			P1-K25 P3-H4					.15 .19	NO NO		7, 18 4	
A 201	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 201B	2		E16-B SHLD A201					.25 .25	NO NO			
A 201W			P1-A26 P3-H5					.15 .19	NO NO		7, 18 4	
A 202	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 202B	2		E16-B SHLD A202					.25 .25	NO NO			
A 202W			P1-A27 P3-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 53 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 203	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 203B	2		E16-B SHLD A203					.25 .25	NO NO			
A 203W			P1-A28 P3-H7					.15 .19	NO NO		7, 18 4	
A 204	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 204B	2		E16-B SHLD A204					.25 .25	NO NO			
A 204W			P1-A29 P3-H8					.15 .19	NO NO		7, 18 4	
A 205	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 205B	2		E16-B SHLD A205					.25 .25	NO NO			
A 205W			P1-A30 P3-J1					.15 .19	NO NO		7, 18 4	
A 206	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 206B	2		E16-B SHLD A206					.25 .25	NO NO			
A 206W			P1-A31 P3-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR AD	SHEET 54 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 207	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 207B	2		E17-B SHLD A207					.25 .25	NO NO			
A 207W			P1-A32 P3-J3					.15 .19	NO NO		7, 18 4	
A 208	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 208B	2		E17-B SHLD A208					.25 .25	NO NO			
A 208W			P1-A33 P3-J4					.15 .19	NO NO		7, 18 4	
A 211	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 211B	2		E17-B SHLD A211					.25 .25	NO NO			
A 211W			P1-B26 P3-J7					.15 .19	NO NO		7, 18 4	
A 212	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 212B	2		E17-B SHLD A212					.25 .25	NO NO			
A 212W			P1-B27 P3-J8					.15 .19	NO NO		7, 18 4	

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SCALE-NONE | REV LTR AD | SHEET 55 OF 75

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CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 213	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 213B	2		E17-B SHLD A213					.25 .25	NO NO			
A 213W			P1-B28 P3-K1					.15 .19	NO NO		7, 18 4	
A 214	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 214B	2		E17-B SHLD A214					.25 .25	NO NO			
A 214W			P1-B29 P3-K2					.15 .19	NO NO		7, 18 4	
A 215	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 215B	2		E17-B SHLD A215					.25 .25	NO NO			
A 215W			P1-B30 P3-K3					.15 .19	NO NO		7, 18 4	
A 216	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 216B	2		E17-B SHLD A216					.25 .25	NO NO			
A 216W			P1-B31 P3-K6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 56 OF 75

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CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 217	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 217B	2		E17-B SHLD A217					.25 .25	NO NO			
A 217W			P1-B32 P3-K7					.15 .19	NO NO		7, 18 4	
A 218	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 218B	2		E17-B SHLD A218					.25 .25	NO NO			
A 218W			P1-B33 P3-K8					.15 .19	NO NO		7, 18 4	
A 219	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 219B	2		E17-B SHLD A219					.25 .25	NO NO			
A 219W			P1-B34 P3-L1					.15 .19	NO NO		7, 18 4	
A 220	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 220B	2		E17-B SHLD A220					.25 .25				
A 220W			P1-B35 P3-L2					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 57 OF 75

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CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 221	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 221B	2		E18-B SHLD A221					.25 .25				
A 221W			P1-C26 P3-L7					.15 .19			7, 18 4	
A 222	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 222B	2		E18-B SHLD A222					.25 .25				
A 222W			P1-C27 P3-L6					.15 .19			7, 18 4	
A 223	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 223B	2		E18-B SHLD A223					.25 .25				
A 223W			P1-C28 P3-M1					.15 .19			7, 18 4	
A 224	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 224B	2		E18-B SHLD A224					.25 .25				
A 224W			P1-C29 P3-M2					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 58 OF 75

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CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 225	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 225B	2		E18-B SHLD A224					.25 .25				
A 225W			P1-C30 P3-M3					.15 .19			7, 18 4	
A 226	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 226B	2		E18-B SHLD A226					.25 .25				
A 226W			P1-C31 P3-M6					.15 .19			7, 18 4	
A 227	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 227B	2		E18-B SHLD A227					.25 .25				
A 227W			P1-C32 P3-M7					.15 .19			7, 18 4	
A 228	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 228B	2		E18-B SHLD A228					.25 .25	NO NO			
A 228W			P1-C33 P3-M8					.15 .19	NO NO		7, 18 4	

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CODE IDENT NO. 99974
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SCALE-NONE REV LTR *D SHEET 59 OF 75

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CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 229	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 229B	2		E18-B SHLD A229					.25 .25	NO NO			
A 229W			P1-C34 P3-N1					.15 .19	NO NO		7, 18 4	
A 230	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 230B	2		E18-B SHLD A230					.25 .25	NO NO			
A 230W			P1-C35 P3-N2					.15 .19	NO NO		7, 18 4	
A 231	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 231B	2		E18-B SHLD A231					.25 .25	NO NO			
A 231W			P1-D26 P3-N3					.15 .19	NO NO		7, 18 4	
A 232	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 232B	2		E18-B SHLD A232					.25 .25	NO NO			
A 232W			P1-D27 P3-N4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE REV LTR *D SHEET 60 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 233	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 233B	2		E19-B SHLD A233					.25 .25	NO NO			
A 233W			P1-D28 P3-N5					.15 .19	NO NO		7, 18 4	
A 234	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 234B	2		E19-B SHLD A234					.25 .25	NO NO			
A 234W			P1-D29 P3-N6					.15 .19	NO NO		7, 18 4	
A 235	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 235B	2		E19-B SHLD A235					.25 .25	NO NO			
A 235W			P1-D30 P3-N7					.15 .19	NO NO		7, 18 4	
A 236	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 236B	2		E19-B SHLD A236					.25 .25	NO NO			
A 236W			P1-D31 P3-N8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE REV LTR *D SHEET 61 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 237	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 237B	2		E19-B SHLD A237					.25 .25	NO NO			
A 237W			P1-D32 P3-P1					.15 .19	NO NO		7, 18 4	
A 238	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 238B	2		E19-B SHLD A238					.25 .25	NO NO			
A 238W			P1-D33 P3-P2					.15 .19	NO NO		7, 18 4	
A 239	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 239B	2		E19-B SHLD A239					.25 .25	NO NO			
A 239W			P1-D34 P3-P3					.15 .19	NO NO		7, 18 4	
A 240	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 240B	2		E19-B SHLD A240					.25 .25	NO NO			
A 240W			P1-D35 P3-P4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE REV LTR *D SHEET 62 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 241	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 241B	2		E19-B SHLD A241					.25 .25	NO NO			
A 241W			P1-F26 P3-P5					.15 .19	NO NO		7, 18 4	
A 242	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 242B	2		E19-B SHLD A242					.25 .25	NO NO			
A 242W			P1-F27 P3-P6					.15 .19	NO NO		7, 18 4	
A 243	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 243B	2		E19-B SHLD A243					.25 .25	NO NO			
A 243W			P1-F28 P3-P7					.15 .19	NO NO		7, 18 4	
A 244	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 244B	2		E19-B SHLD A244					.25 .25	NO NO			
A 244W			P1-F29 P3-P8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR A D	SHEET 63 OF 75

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 245	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 245B	2		E20-B SHLD A245					.25 .25	NO NO			
A 245W			P1-F30 P3-R1					.15 .19	NO NO		7, 18 4	
A 246	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 246B	2		E20-B SHLD A246					.25 .25	NO NO			
A 246W			P1-F31 P3-R2					.15 .19	NO NO		7, 18 4	
A 247	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 247B	2		E20-B SHLD A247					.25 .25	NO NO			
A 247W			P1-F32 P3-R3					.15 .19	NO NO		7, 18 4	
A 248	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 248B	2		E20-B SHLD A248					.25 .25	NO NO			
A 248W			P1-F33 P3-R4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR *D	SHEET 64 OF 75

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 249	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 249B	2		E20-B SHLD A249					.25 .25	NO NO			
A 249W			P1-F34 P3-R5					.15 .19	NO NO		7, 18 4	
A 250	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 250B	2		E20-B SHLD A250					.25 .25	NO NO			
A 250W			P1-F35 P3-R6					.15 .19	NO NO		7, 18 4	
A 251	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 251B	2		E20-B SHLD A251					.25 .25	NO NO			
A 251W			P1-G26 P3-R7					.15 .19	NO NO		7, 18 4	
A 252	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 252B	2		E20-B SHLD A252					.25 .25	NO NO			
A 252W			P1-G27 P3-R8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR *D	SHEET 65 OF 75

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 253	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 253B	2		E20-B SHLD A253					.25 .25	NO NO			
A 253W			P1-G28 P3-S1					.15 .19	NO NO		7, 18 4	
A 254	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 254B	2		E20-B SHLD A254					.25 .25	NO NO			
A 254W			P1-G29 P3-S2					.15 .19	NO NO		7, 18 4	
A 255	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 255B	2		E20-B SHLD A255					.25 .25	NO NO			
A 255W			P1-G30 P3-S3					.15 .19	NO NO		7, 18 4	
A 256	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 256B	2		E20-B SHLD A256					.25 .25	NO NO			
A 256W			P1-G31 P3-S4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR *D	SHEET 66 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 257	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 257B	2		E21-B SHLD A257					.25 .25	NO NO			
A 257W			P1-G32 P3-S5					.15 .19	NO NO		7, 18 4	
A 258	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 258B	2		E21-B SHLD A258					.25 .25	NO NO			
A 258W			P1-G33 P3-S6					.15 .19	NO NO		7, 18 4	
A 259	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 259B	2		E21-B SHLD A259					.25 .25	NO NO			
A 259W			P1-G34 P3-S7					.15 .19	NO NO		7, 18 4	
A 260	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 260B	2		E21-B SHLD A260					.25 .25	NO NO			
A 260W			P1-G35 P3-S8					.15 .19	NO NO		7, 18 4	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 261	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 261B	2		E21-B SHLD A261					.25 .25	NO NO			
A 261W			P1-H26 P3-T1					.15 .19	NO NO		7, 18 4	
A 262	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 262B	2		E21-B SHLD A262					.25 .25	NO NO			
A 262W			P1-H27 P3-T2					.15 .19	NO NO		7, 18 4	
A 263	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 263B	2		E21-B SHLD A263					.25 .25	NO NO			
A 263W			P1-H28 P3-T3					.15 .19	NO NO		7, 18 4	
A 264	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 264B	2		E21-B SHLD A264					.25 .25	NO NO			
A 264W			P1-H29 P3-T4					.15 .19	NO NO		7, 18 4	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 265	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 265B	2		E21-B SHLD A265					.25 .25	NO NO			
A 265W			P1-H30 P3-T5					.15 .19	NO NO		7, 18 4	
A 266	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 266B	2		E21-B SHLD A266					.25 .25	NO NO			
A 266W			P1-H31 P3-T6					.15 .19	NO NO		7, 18 4	
A 267	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 267B	2		E21-B SHLD A267					.25 .25	NO NO			
A 267W			P1-H32 P3-T7					.15 .19	NO NO		7, 18 4	
A 268	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 268B	2		E21-B SHLD A268					.25 .25	NO NO			
A 268W			P1-H33 P3-T8					.15 .19	NO NO		7, 18 4	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 269	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 269B	2		E22-B SHLD A269					.25 .25	NO NO			
A 269W			P1-H34 P3-U1					.15 .19	NO NO		7, 18 4	
A 270	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 270B	2		E22-B SHLD A270					.25 .25	NO NO			
A 270W			P1-H35 P3-U2					.15 .19	NO NO		7, 18 4	
A 271	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 271B	2		E22-B SHLD A271					.25 .25	NO NO			
A 271W			P1-K26 P3-U3					.15 .19	NO NO		7, 18 4	
A 272	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 272B	2		E22-B SHLD A272					.25 .25	NO NO			
A 272W			P1-K27 P3-U4					.15 .19	NO NO		7, 18 4	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 273	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 273B	2		E22-B SHLD A273					.25 .25	NO NO			
A 273W			P1-K28 P3-U5					.15 .19	NO NO		7, 18 4	
A 274	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 274B	2		E22-B SHLD A274					.25 .25	NO NO			
A 274W			P1-K29 P3-U6					.15 .19	NO NO		7, 18 4	
A 275	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 275B	2		E22-B SHLD A275					.25 .25	NO NO			
A 275W			P1-K30 P3-U7					.15 .19	NO NO		7, 18 4	
A 276	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 276B	2		E22-B SHLD A276					.25 .25	NO NO			
A 276W			P1-K31 P3-U8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 71 OF 75

MIL 2084 9.65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 277	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 277B	2		E22-B SHLD A277					.25 .25	NO NO			
A 277W			P1-K32 P3-V1					.15 .19	NO NO		7, 18 4	
A 278	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 6, 9	
A 278B	2		E22-B SHLD A278					.25 .25	NO NO			
A 278W			P1-K33 P3-V2					.15 .19	NO NO		7, 18 4	
A 279	6		E1-BB E23-B					.25 .25	NO NO			
A 280	6		E2-BB E23-B					.25 .25	NO NO			
A 281	6		E3-BB E23-B					.25 .25	NO NO			
A 282	6		E4-BB E23-B					.25 .25	NO NO			
A 283	6		E5-BB E23-B					.25 .25	NO NO			
A 284	6		E6-BB E23-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 72 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 285	6		E7-BB E23-B					.25 .25	NO NO			
A 286	6		E8-BB E23-B					.25 .25	NO NO			
A 287	6		E9-BB E23-B					.25 .25	NO NO			
A 288	6		E10-BB E23-B					.25 .25	NO NO			
A 289	6		E11-BB E23-B					.25 .25	NO NO			
A 290	6		E12-BB E23-B					.25 .25	NO NO			
A 291	6		E13-BB E24-B					.25 .25	NO NO			
A 292	6		E14-BB E24-B					.25 .25	NO NO			
A 293	6		E15-BB E24-B					.25 .25	NO NO			
A 294	6		F16-BB E24-B					.25 .25	NO NO			
A 295	6		E17-BB E24-B					.25 .25	NO NO			
A 296	6		E18-BB E24-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 73 OF 75

MIL 2084 9.65

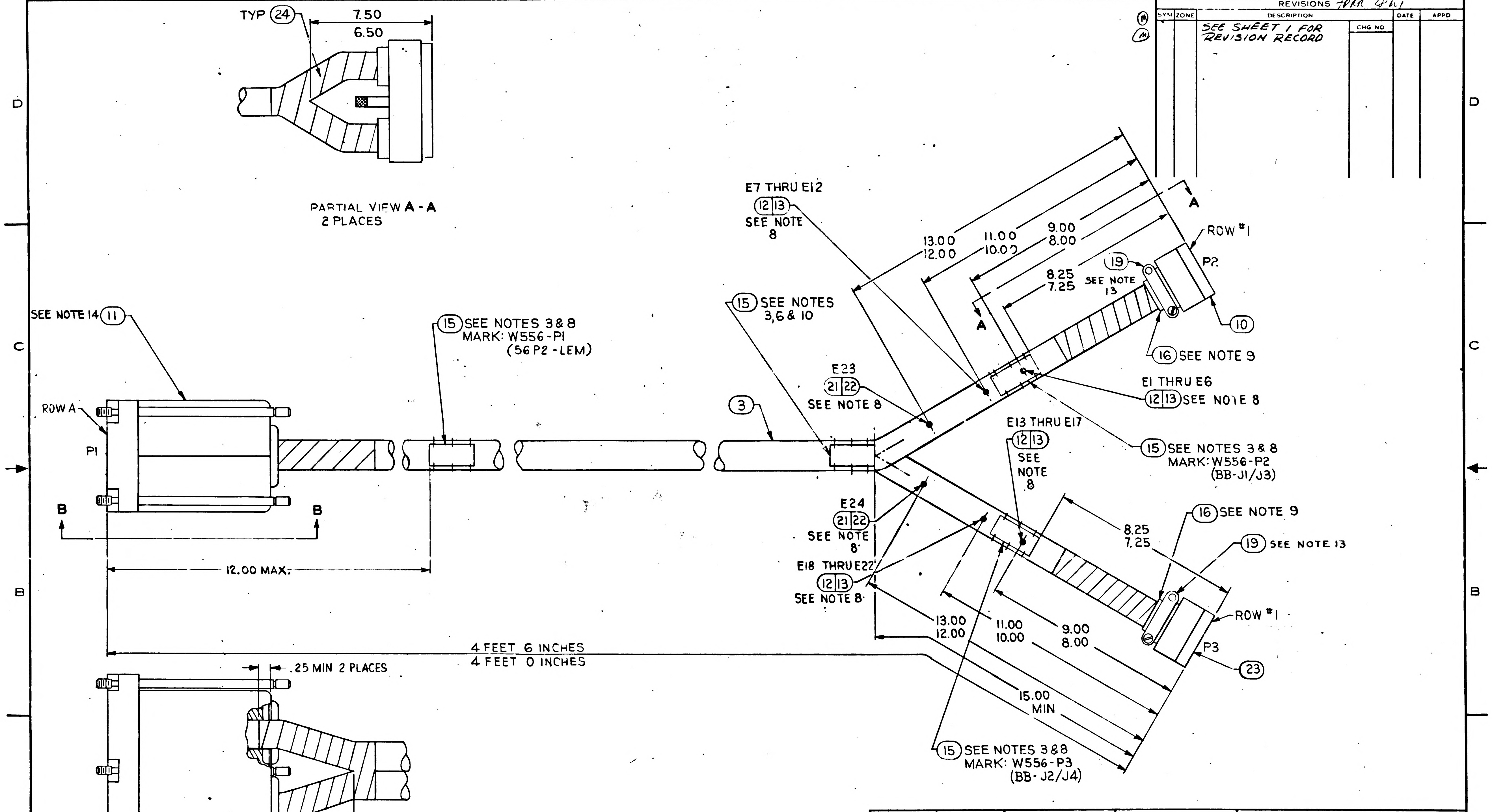
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 297	6		E19-BB E24-B					.25 .25	NO NO			
A 298	6		F20-BB E24-B					.25 .25	NO NO			
A 299	6		E21-BB E24-B					.25 .25	NO NO			
A 300	6		E22-BB E24-B					.25 .25	NO NO			
A 301	5		E23-BB P2-X6					.25 .19	NO NO		 25	
A 302	5		E24-BB P3-X6					.25 .19	NO NO		 25	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D	SHEET 74 OF 75

E 6900079

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
		SEE SHEET 1 FOR REVISION RECORD			

REVISIONS



TYP 24
7.50
6.50
PARTIAL VIEW A - A
2 PLACES
SEE NOTE 14 11
ROW A
P1
B
B
12.00 MAX.
15 SEE NOTES 3 & 8
MARK: W556-P1
(56P2 - LEM)
3
15 SEE NOTES 3,6 & 10
E7 THRU E12
12 13
SEE NOTE 8
E23
21 22
SEE NOTE 8
13.00
12.00
11.00
10.00
9.00
8.00
8.25
7.25
19
SEE NOTE 13
A
A
ROW #1
P2
10
16 SEE NOTE 9
E1 THRU E6
12 13 SEE NOTE 8
15 SEE NOTES 3 & 8
MARK: W556-P2
(BB-J1/J3)
E13 THRU E17
12 13
SEE NOTE 8
E24
21 22
SEE NOTE 8
E18 THRU E22
12 13
SEE NOTE 8
16 SEE NOTE 9
19 SEE NOTE 13
8.25
7.25
ROW #1
P3
23
13.00
12.00
11.00
10.00
9.00
8.00
15.00 MIN
4 FEET 6 INCHES
4 FEET 0 INCHES
15 SEE NOTES 3 & 8
MARK: W556-P3
(BB-J2/J4)
.25 MIN 2 PLACES
6.00 APPROX
PARTIAL VIEW B-B

6900077-011	6900077-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± –
3 PLACE DECIMALS ± –
ANGLES ± –
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN J. Kilvinger DATE 9 DEC 65
CHECKED J. Shayler 13 DEC 65
APPROVAL L. Zeleman 5/2/66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W556

SIZE D
CODE IDENT NO. 99974
6900079
SCALE NONE
SHEET 75 OF 75

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	REPLACES REV (+) WITH CHANGE PER MXC 209930	16 MAR 66	RF
B	REVISED PER MXC 210436	31-MAR-66	B. P7
C	REVISED PER MXC 211613	22 APR 66	RWT RWH
D	INITIAL RELEASE CLASS A PER TDRR 28601	3-MAY 66	GM EF
E	REVISED PER TDRR 30477	11 AUG. 66	JI R.W.
F	REVISED PER TDRR 30510	24 AUG 66	MEA

Ⓜ

REV		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D
SHEET		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
REV STATUS OF SHEETS	REV			F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D				
	SHEET			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN 9 DEC 65 (DAY MO YR)
CHECKER 13 DEC 65
ENGINEER 14 DEC 65
APPROVAL 8/3/66
CONTR NO. NAS 9-497

NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W556

SIZE A | CODE IDENT. NO 99974 | 6900079
SCALE NONE | SHEET 1 OF 75

MIL 1377A6 12-65

REVISION STATUS OF SHEETS

SH	REV
48	D
49	D
50	F
51	F
52	D
53	D
54	D
55	D
56	D
57	D
58	D
59	F
60	D
61	D
62	D
63	D
64	D
65	D
66	D
67	D
68	D
69	D
70	D
71	D
72	D
73	D
74	D
75	E

SIZE A | CODE IDENT. NO. 99974 | 6900079
SCALE NONE | REV LTR F | SHEET 2 OF 75

MIL 1377A3 6-65

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER – A – ND1002071 B – ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 17.
4	VENDOR ITEM – SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
5	APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
6	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
7	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER – A – FROM END SHIELD B – TO END SHIELD W – WHITE
8	MARK REFERENCE DESIGNATIONS SHOWN PER ND1002019, HOT IMPRESSION STAMPING, USING .12 BLACK CHARACTERS CENTRALIZED.
9	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 16 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP. USE ONLY IF REQUIRED.
10	SERIALIZE PER ND1002023.
11	LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES
12	ASSEMBLE PER ND1002032

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR E	SHEET 3 OF 75

NOTE NUMBER	GENERAL NOTES DESCRIPTION
13	AT ASSEMBLY OF ITEM 19 REMOVE 4 SELF-LOCKING NUTS SECURING LOCATING PINS TO CONNECTOR AND DISCARD. ATTACH ITEM 19 USING LOCATING PINS.
14	SPOT TIE GROUPS OF LEADS ADJACENT TO INTERNAL CLAMP (CONNECTOR SIDE). USE ITEM 24 TO SHAPE WIRE BUNDLE IN CLAMP. USE ITEM 16 TO SECURE WIRE BUNDLE IN CLAMP, IF REQUIRED.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR E	SHEET 4 OF 75

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900079-001	WIRE ND1002181 TYPE 1 CLASS 4 22 AWG WHT JKT WHT 1048 FT TOTAL LENGTH
	2	1	6900079-002	WIRE ND1002181 TYPE 1 CLASS 1 24 AWG WHT 131 FT TOTAL LENGTH
	3	1	6900079-006	ZIPPER TUBING PER ND1002155 TYPE 4 GREY 2.0 DIA 4 FT TOTAL LENGTH 2 CHANNEL
4	4	262	1016369-421	CONTACT, SOCKET
	5	1	6900079-005	WIRE ND1002181 TYPE 1 CLASS 1 16 AWG WHT 2 FT TOTAL LENGTH
	6	1	6900079-004	WIRE ND1002181 TYPE 1 CLASS 1 20 AWG WHT 8 FT TOTAL LENGTH
4	7	262	1897300-002	CONTACT, SPRING SOCKET
4	8	262	1010763-002	SOLDER SLEEVE
4	9	524	1010490-232	INSULATION SLEEVING SHRINK FIT
	10	1	2901434-011	CONNECTOR
4	11	1	6900050-011	CONNECTOR
4	12	22	1016006-002	SPLICE REDUCER
4	13	22	1010490-258	INSULATION SLEEVING SHRINK FIT
	14		1015902-003	DELETED
4	15	4	1016128-021	BAND IDENTIFICATION

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR E	SHEET 5 OF 75

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	16	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A, CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	17	AR	MIL-T-713B TYPE P CLASS 2,BLK	LACING TAPE
4	18	262	1015864-232	INSULATION SLEEVING, ELECT.
4	19	2	1897391	CLAMP, CABLE DUAL ENTRY
	20		1010490-166	DELETED
4	21	2	1016006-004	SPLICE REDUCER
4	22	2	1010490-342	INSULATION SLEEVING SHRINK FIT
4	23	1	2901434-021 ~~1897336-002~~	CONNECTOR
	24	AR	MIL-I-15126 TYPE ACT	INSULATION TAPE ELEC PRESSURE SENSITIVE THERMO SETTING ADHESIVE, .75 + OR -.03 WIDE (ES2716 TYPE C)
	25	2	1016369-721	CONTACT, SOCKET

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR D ~~E~~	SHEET 6 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 3B	2		E1-B SHLD A3					.25 .25	NO NO			
A 3W			P1-A3 P2-A5					.15 .19	NO NO		7, 18 4	
A 4	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 4B	2		E1-B SHLD A4					.25 .25	NO NO			
A 4W			P1-A4 P2-A6					.15 .19	NO NO		7, 18 4	
A 5	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 5B	2		E1-B SHLD A5					.25 .25	NO NO			
A 5W			P1-A5 P2-B1					.15 .19	NO NO		7, 18 4	
A 6	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 6B	2		E1-B SHLD A6					.25 .25	NO NO			
A 6W			P1-A6 P2-B2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 7 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 7	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 7B	2		E1-B SHLD A7					.25 .25	NO NO			
A 7W			P1-A7 P2-B3					.15 .19	NO NO		7, 18 4	
A 8	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 8B	2		E1-B SHLD A8					.25 .25	NO NO			
A 8W			P1-A8 P2-B4					.15 .19	NO NO		7, 18 4	
A 9	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 9B	2		E1-B SHLD A9					.25 .25	NO NO			
A 9W			P1-A9 P2-B5					.15 .19	NO NO		7, 18 4	
A 10	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 10B	2		E1-B SHLD A10					.25 .25	NO NO			
A 10W			P1-A10 P2-B6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 8 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 11	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 11B	2		E1-B SHLD A11					.25 .25	NO NO			
A 11W			P1-A11 P2-B7					.15 .19	NO NO		7, 18 4	
A 12	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 12B	2		E1-B SHLD A12					.25 .25	NO NO			
A 12W			P1-A12 P2-B8					.15 .19	NO NO		7, 18 4	
A 13	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 13B	2		E1-B SHLD A13					.25 .25	NO NO			
A 13W			P1-A13 P2-C1					.15 .19	NO NO		7, 18 4	
A 14	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 14B	2		E1-B SHLD A14					.25 .25	NO NO			
A 14W			P1-A14 P2-C2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 9 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 15B	2		E2-B SHLD A15					.25 .25	NO NO			
A 15W			P1-A15 P2-C3					.15 .19	NO NO		7, 18 4	
A 16	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 16B	2		E2-B SHLD A16					.25 .25	NO NO			
A 16W			P1-B1 P2-C4					.15 .19	NO NO		7, 18 4	
A 17	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 17B	2		E2-B SHLD A17					.25 .25	NO NO			
A 17W			P1-B2 P2-C5					.15 .19	NO NO		7, 18 4	
A 18	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 18B	2		E2-B SHLD A18					.25 .25				
A 18W			P1-B3 P2-C6					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 10 OF 75

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-B4 P2-C7					.15 .19	NO NO		7, 18 4	
A 20	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 20B	2		E2-B SHLD A20					.25 .25	NO NO			
A 20W			P1-B5 P2-C8					.15 .19	NO NO		7, 18 4	
A 21	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 21B	2		E2-B SHLD A21					.25 .25	NO NO			
A 21W			P1-B6 P2-D1					.15 .19	NO NO		7, 18 4	
A 22	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 22B	2		E2-B SHLD A22					.25 .25	NO NO			
A 22W			P1-B7 P2-D2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE REV LTR D★ SHEET 11 OF 75

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CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 23B	2		E2-B SHLD A23					.25 .25	NO NO			
A 23W			P1-B8 P2-D3					.15 .19	NO NO		7, 18 4	
A 24	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 24B	2		E2-B SHLD A24					.25 .25	NO NO			
A 24W			P1-B9 P2-D4					.15 .19	NO NO		7, 18 4	
A 25	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 25B	2		E2-B SHLD A25					.25 .25	NO NO			
A 25W			P1-B10 P2-D5					.15 .19	NO NO		7, 18 4	
A 26	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 26B	2		E2-B SHLD A26					.25 .25	NO NO			
A 26W			P1-B11 P2-D6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE REV LTR D★ SHEET 12 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 27B	2		E3-B SHLD A27					.25 .25	NO NO			
A 27W			P1-B12 P2-D7					.15 .19	NO NO		7, 18 4	
A 28	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 28B	2		E3-B SHLD A28					.25 .25	NO NO			
A 28W			P1-B13 P2-D8					.15 .19	NO NO		7, 18 4	
A 29	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 29B	2		E3 SHLD A29					.25 .25	NO NO			
A 29W			P1-B14 P2-E1					.15 .19	NO NO		7, 18 4	
A 30	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 30B	2		E3 SHLD A30					.25 .25	NO NO			
A 30W			P1-B15 P2-E2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE REV LTR D★ SHEET 13 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31	1				6.75 6.75	6.50 6.50				B,7 A,6A		
A 31B	2		E3 SHLD A31					.25 .25	NO NO			
A 31W			P1-C1 P2-E3					.15 .19	NO NO		7, 18 4	
A 32	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 32B	2		E3 SHLD A32					.25 .25	NO NO			
A 32W			P1-C2 P2-E4					.15 .19	NO NO		7, 18 4	
A 33	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 33B	2		E3-B SHLD A33					.25 .25	NO NO			
A 33W			P1-C3 P2-E5					.15 .19	NO NO		7, 18 4	
A 34	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 34B	2		E3-B SHLD A34					.25 .25	NO NO			
A 34W			P1-C4 P2-E6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE REV LTR D★ SHEET 14 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 35	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 35B	2		E3-B SHLD A35					.25 .25	NO NO			
A 35W			P1-C5 P2-E7					.15 .19	NO NO		7, 18 4	
A 36	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 36B	2		E3-B SHLD A36					.25 .25	NO NO			
A 36W			P1-C6 P2-E8					.15 .19	NO NO		7, 18 4	
A 37	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 37B	2		E3-B SHLD A37					.25 .25	NO NO			
A 37W			P1-C7 P2-F1					.15 .19	NO NO		7, 18 4	
A 38	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 38B	2		E3-B SHLD A38					.25 .25	NO NO			
A 38W			P1-C8 P2-F2					.15 .19	NO NO		7, 18 4	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 39	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 39B	2		E4-B SHLD A39					.25 .25	NO NO			
A 39W			P1-C9 P2-F3					.15 .19	NO NO		7, 18 4	
A 40	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 40B	2		E4-B SHLD A40					.25 .25	NO NO			
A 40W			P1-C10 P2-F4					.15 .19	NO NO		7, 18 4	
A 41	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 41B	2		E4-B SHLD A41					.25 .25	NO NO			
A 41W			P1-C11 P2-F5					.15 .19	NO NO		7, 18 4	
A 42	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 42B	2		E4-B SHLD A42					.25 .25	NO NO			
A 42W			P1-C12 P2-F6					.15 .19	NO NO		7, 18 4	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 43B	2		E4-B SHLD A43					.25 .25	NO NO			
A 43W			P1-C13 P2-F7					.15 .19	NO NO		7, 18 4	
A 44	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 44B	2		E4-B SHLD A44					.25 .25	NO NO			
A 44W			P1-C14 P2-F8					.15 .19	NO NO		7, 18 4	
A 45	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 45B	2		E4-B SHLD A45					.25 .25	NO NO			
A 45W			P1-C15 P2-G1					.15 .19	NO NO		7, 18 4	
A 46	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 46B	2		E4-B SHLD A46					.25 .25	NO NO			
A 46W			P1-D1 P2-G2					.15 .19	NO NO		7, 18 4	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 47B	2		E4-B SHLD A47					.25 .25	NO NO			
A 47W			P1-D2 P2-G3					.15 .19	NO NO		7, 18 4	
A 48	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 48B	2		E4-B SHLD A48					.25 .25	NO NO			
A 48W			P1-D3 P2-G4					.15 .19	NO NO		7, 18 4	
A 49	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 49B	2		E4-B SHLD A49					.25 .25	NO NO			
A 49W			P1-D4 P2-G5					.15 .19	NO NO		7, 18 4	
A 50	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 50B	2		E4-B SHLD A50					.25 .25	NO NO			
A 50W			P1-D5 P2-G6					.15 .19	NO NO		7, 18 4	

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 51	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 51B	2		E5-B SHLD A51					.25 .25	NO NO			
A 51W			P1-D6 P2-G7					.15 .19	NO NO		7, 18 4	
A 52	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 52B	2		E5-B SHLD A52					.25 .25	NO NO			
A 52W			P1-D7 P2-G8					.15 .19	NO NO		7, 18 4	
A 53	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 53B	2		E5-B SHLD A53					.25 .25	NO NO			
A 53W			P1-D8 P2-H1					.15 .19	NO NO		7, 18 4	
A 54	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 54B	2		E5-B SHLD A54					.25 .25	NO NO			
A 54W			P1-D9 P2-H2					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 19 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 55	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 55B	2		E5-B SHLD A55					.25 .25	NO NO			
A 55W			P1-D10 P2-H3					.15 .19	NO NO		7, 18 4	
A 56	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 56B	2		E5-B SHLD A56					.25 .25	NO NO			
A 56W			P1-D11 P2-H4					.15 .19	NO NO		7, 18 4	
A 57	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 57B	2		E5-B SHLD A57					.25 .25	NO NO			
A 57W			P1-D12 P2-H5					.15 .19	NO NO		7, 18 4	
A 58	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 58B	2		E5-B SHLD A58					.25 .25	NO NO			
A 58W			P1-D13 P2-H6					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 20 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 59	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 59B	2		E5-B SHLD A59					.25 .25	NO NO			
A 59W			P1-D14 P2-H7					.15 .19	NO NO		7, 18 4	
A 60	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 60B	2		E5-B SHLD A60					.25 .25	NO NO			
A 60W			P1-D15 P2-H8					.15 .19	NO NO		7, 18 4	
A 61	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 61B	2		E5-B SHLD A61					.25 .25	NO NO			
A 61W			P1-F1 P2-J1					.15 .19	NO NO		7, 18 4	
A 62	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 62B	2		E5-B SHLD A62					.25 .25	NO NO			
A 62W			P1-F2 P2-J2					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 21 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 63B	2		E6-B SHLD A63					.25 .25	NO NO			
A 63W			P1-F3 P2-J3					.15 .19	NO NO		7, 18 4	
A 64	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 64B	2		E6-B SHLD A64					.25 .25	NO NO			
A 64W			P1-F4 P2-J4					.15 .19	NO NO		7, 18 4	
A 65	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 65B	2		E6-B SHLD A65					.25 .25	NO NO			
A 65W			P1-F5 P2-J5					.15 .19	NO NO		7, 18 4	
A 66	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 66B	2		E6-B SHLD A66					.25 .25	NO NO			
A 66W			P1-F6 P2-J6					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 22 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 67	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 67B	2		E6-B SHLD A67					.25 .25	NO NO			
A 67W			P1-F7 P2-J7					.15 .19	NO NO		7, 18 4	
A 68	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 68B	2		E6-B SHLD A68					.25 .25	NO NO			
A 68W			P1-F8 P2-J8					.15 .19	NO NO		7, 18 4	
A 69	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 69B	2		E6-B SHLD A69					.25 .25	NO NO			
A 69W			P1-F9 P2-K1					.15 .19	NO NO		7, 18 4	
A 70	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 70B	2		E6-B SHLD A70					.25 .25	NO NO			
A 70W			P1-F10 P2-K2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 23 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 71	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 71B	2		E6-B SHLD A71					.25 .25	NO NO			
A 71W			P1-F11 P2-K3					.15 .19	NO NO		7, 18 4	
A 72	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 72B	2		E6-B SHLD A72					.25 .25	NO NO			
A 72W			P1-F12 P2-K6					.15 .19	NO NO		7, 18 4	
A 73	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 73B	2		E6-B SHLD A73					.25 .25	NO NO			
A 73W			P1-F13 P2-K7					.15 .19	NO NO		7, 18 4	
A 74	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 74B	2		E6-B SHLD A74					.25 .25	NO NO			
A 74W			P1-F14 P2-K8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 24 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 75B	2		E7-B SHLD A75					.25 .25	NO NO			
A 75W			P1-F15 P2-L1					.15 .19	NO NO		7, 18 4	
A 76	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 76B	2		E7-B SHLD A76					.25 .25	NO NO			
A 76W			P1-G1 P2-L2					.15 .19	NO NO		7, 18 4	
A 77	1				7.75 6.75	7.00 6.00				B,7 A,6A	9 8, 9	
A 77B	2		E7-B SHLD A77					.25 .25	NO NO			
A 77W			P1-G2 P2-L7					.15 .19	NO NO		7, 18 4	
A 78	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 78B	2		E7-B SHLD A78					.25 .25	NO NO			
A 78W			P1-G3 P2-L8					.15 .19	NO NO		7, 13 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 25 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 79B	2		E7-B SHLD A79					.25 .25	NO NO			
A 79W			P1-G4 P2-M1					.15 .19	NO NO		7, 18 4	
A 80	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 80B	2		E7-B SHLD A80					.25 .25	NO NO			
A 80W			P1-G5 P2-M2					.15 .19	NO NO		7, 18 4	
A 81	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 81B	2		E7-B SHLD A81					.25 .25	NO NO			
A 81W			P1-G6 P2-M3					.15 .19	NO NO		7, 18 4	
A 82	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 82B	2		E7-B SHLD A82					.25 .25	NO NO			
A 82W			P1-G7 P2-M6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 26 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 83	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 83B	2		E7-8 SHLD A83					.25 .25	NO NO			
A 83W			P1-G8 P2-M7					.15 .19	NO NO		7, 18 4	
A 84	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 84B	2		E7-8 SHLD A84					.25 .25	NO NO			
A 84W			P1-G9 P2-M8					.15 .19	NO NO		7, 18 4	
A 85	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 85B	2		E7-8 SHLD A85					.25 .25	NO NO			
A 85W			P1-G10 P2-N1					.15 .19	NO NO		7, 18 4	
A 86	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 86B	2		E7-8 SHLD A86					.25 .25	NO NO			
A 86W			P1-G11 P2-N2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 27 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 87B	2		E8-8 SHLD A87					.25 .25	NO NO			
A 87W			P1-G12 P2-N3					.15 .19	NO NO		7, 18 4	
A 88	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 88B	2		E8-8 SHLD A88					.25 .25	NO NO			
A 88W			P1-G13 P2-N4					.15 .19	NO NO		7, 18 4	
A 89	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 89B	2		E8-8 SHLD A89					.25 .25	NO NO			
A 89W			P1-G14 P2-N5					.15 .19	NO NO		7, 18 4	
A 90	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 90B	2		E8-8 SHLD A90					.25 .25	NO NO			
A 90W			P1-G15 P2-N6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 28 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 91B	2		E8-8 SHLD A91					.25 .25	NO NO			
A 91W			P1-H1 P2-N7					.15 .19	NO NO		7, 18 4	
A 92	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 92B	2		E8-8 SHLD A92					.25 .25	NO NO			
A 92W			P1-H2 P2-N8					.15 .19	NO NO		7, 18 4	
A 93	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 93B	2		E8-8 SHLD A93					.25 .25	NO NO			
A 93W			P1-H3 P2-P1					.15 .19	NO NO		7, 18 4	
A 94	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 94B	2		E8-8 SHLD A94					.25 .25	NO NO			
A 94W			P1-H4 P2-P2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 29 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 95B	2		E8-8 SHLD A95					.25 .25	NO NO			
A 95W			P1-H5 P2-P3					.15 .19	NO NO		7, 18 4	
A 96	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 96B	2		E8-8 SHLD A96					.25 .25	NO NO			
A 96W			P1-H6 P2-P4					.15 .19	NO NO		7, 18 4	
A 97	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 97B	2		E8-8 SHLD A97					.25 .25	NO NO			
A 97W			P1-H7 P2-P5					.15 .19	NO NO		7, 18 4	
A 98	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 98B	2		E8-8 SHLD A98					.25 .25	NO NO			
A 98W			P1-H8 P2-P6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR	D★	SHEET 30 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 99	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 99B	2		E9-B SHLD A99					.25 .25	NO NO			
A 99W			P1-H9 P2-P7					.15 .19	NO NO		7, 18 4	
A 100	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 100B	2		E9-B SHLD A100					.25 .25	NO NO			
A 100W			P1-H10 P2-P8					.15 .19	NO NO		7, 18 4	
A 101	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 101B	2		E9-B SHLD A101					.25 .25	NO NO			
A 101W			P1-H11 P2-R1					.15 .19	NO NO		7, 18 4	
A 102	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 102B	2		E9-B SHLD A102					.25 .25	NO NO			
A 102W			P1-H12 P2-R2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 31 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 103B	2		E9-B SHLD A103					.25 .25	NO NO			
A 103W			P1-H13 P2-R3					.15 .19	NO NO		7, 18 4	
A 104	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 104B	2		E9-B SHLD A104					.25 .25	NO NO			
A 104W			P1-H14 P2-R4					.15 .19	NO NO		7, 18 4	
A 105	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 105B	2		E9-B SHLD A105					.25 .25	NO NO			
A 105W			P1-H15 P2-R5					.15 .19	NO NO		7, 18 4	
A 108	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 108B	2		E9-B SHLD A108					.25 .25	NO NO			
A 108W			P1-K3 P2-R8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 32 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 109B	2		E9-B SHLD A109					.25 .25	NO NO			
A 109W			P1-K4 P2-S1					.15 .19	NO NO		7, 18 4	
A 110	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 110B	2		E9-B SHLD A110					.25 .25	NO NO			
A 110W			P1-K5 P2-S2					.15 .19	NO NO		7, 18 4	
A 111	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 111B	2		E9-B SHLD A111					.25 .25	NO NO			
A 111W			P1-K6 P2-S3					.15 .19	NO NO		7, 18 4	
A 112	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 112B	2		E9-B SHLD A112					.25 .25	NO NO			
A 112W			P1-K7 P2-S4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 33 OF 75

MIL 2084 9-65

CABLE W556 6900079 D★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 113	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 113B	2		E10-B SHLD A113					.25 .25	NO NO			
A 113W			P1-K8 P2-S5					.15 .19	NO NO		7, 18 4	
A 114	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 114B	2		E10-B SHLD A114					.25 .25	NO NO			
A 114W			P1-K9 P2-S6					.15 .19	NO NO		7, 18 4	
A 115	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 115B	2		E10-B SHLD A115					.25 .25	NO NO			
A 115W			P1-K10 P2-S7					.15 .19	NO NO		7, 18 4	
A 116	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 116B	2		E10-B SHLD A116					.25 .25	NO NO			
A 116W			P1-K11 P2-S8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 34 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 117	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 117B	2		E10-B SHLD A117					.25 .25	NO NO			
A 117W			P1-K12 P2-T1					.15 .19	NO NO		7, 18 4	
A 118	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 118B	2		E10-B SHLD A118					.25 .25	NO NO			
A 118W			P1-K13 P2-T2					.15 .19	NO NO		7, 18 4	
A 119	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 119B	2		E10-B SHLD A119					.25 .25	NO NO			
A 119W			P1-K14 P2-T3					.15 .19	NO NO		7, 18 4	
A 120	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 120B	2		E10-B SHLD A120					.25 .25	NO NO			
A 120W			P1-K15 P2-T4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 35 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 126B	2		E10-B SHLD A126					.25 .25	NO NO			
A 126W			P1-A21 P2-U2					.15 .19	NO NO		7, 18 4	
A 127	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 127B	2		E10-B SHLD A127					.25 .25	NO NO			
A 127W			P1-A22 P2-U3					.15 .19	NO NO		7, 18 4	
A 128	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 128B	2		E10-B SHLD A128					.25 .25	NO NO			
A 128W			P1-A23 P2-U4					.15 .19	NO NO		7, 18 4	
A 129	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 129B	2		E10-B SHLD A129					.25 .25	NO NO			
A 129W			P1-A24 P2-U5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 36 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 130	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 130B	2		E11-B SHLD A130					.25 .25	NO NO			
A 130W			P1-A25 P2-U6					.15 .19	NO NO		7, 18 4	
A 131	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 131B	2		E11-B SHLD A131					.25 .25	NO NO			
A 131W			P1-B16 P2-U7					.15 .19	NO NO		7, 18 4	
A 132	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 132B	2		E11-B SHLD A132					.25 .25	NO NO			
A 132W			P1-B17 P2-U8					.15 .19	NO NO		7, 18 4	
A 133	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 133B	2		E11-B SHLD A133					.25 .25	NO NO			
A 133W			P1-B18 P2-V1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 37 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 134	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 134B	2		E11-B SHLD A134					.25 .25	NO NO			
A 134W			P1-B19 P2-V2					.15 .19	NO NO		7, 18 4	
A 135	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 135B	2		E11-B SHLD A135					.25 .25	NO NO			
A 135W			P1-B20 P2-V3					.15 .19	NO NO		7, 18 4	
A 136	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 136B	2		E11-B SHLD A136					.25 .25	NO NO			
A 136W			P1-B21 P2-V4					.15 .19	NO NO		7, 18 4	
A 137	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 137B	2		E11-B SHLD A137					.25 .25	NO NO			
A 137W			P1-B22 P2-V5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR D★
SHEET 38 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 138	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 138B	2		E11-B SHLD A138					.25 .25	NO NO			
A 138W			P1-B23 P2-V6					.15 .19	NO NO		7, 18 4	
A 139	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 139B	2		E11-B SHLD A139					.25 .25	NO NO			
A 139W			P1-B24 P2-V7					.15 .19	NO NO		7, 18 4	
A 140	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 140B	2		E11-B SHLD A140					.25 .25	NO NO			
A 140W			P1-B25 P2-V8					.15 .19	NO NO		7, 18 4	
A 141	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 141B	2		E11-B SHLD A141					.25 .25	NO NO			
A 141W			P1-C16 P2-W1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 39 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 142	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 142B	2		E12-B SHLD A142					.25 .25	NO NO			
A 142W			P1-C17 P2-W2					.15 .19	NO NO		7, 18 4	
A 143	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 143B	2		E12-B SHLD A143					.25 .25	NO NO			
A 143W			P1-C18 P2-W3					.15 .19	NO NO		7, 18 4	
A 144	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 144B	2		E12-B SHLD A144					.25 .25	NO NO			
A 144W			P1-C19 P2-W4					.15 .19	NO NO		7, 18 4	
A 145	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 145B	2		E12-B SHLD A145					.25 .25	NO NO			
A 145W			P1-C20 P2-W5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 40 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 146	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 146B	2		E12-B SHLD A146					.25 .25	NO NO			
A 146W			P1-C21 P2-W6					.15 .19	NO NO		7, 18 4	
A 147	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 147B	2		E12-B SHLD A147					.25 .25	NO NO			
A 147W			P1-C22 P2-W7					.15 .19	NO NO		7, 18 4	
A 148	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 148B	2		E12-B SHLD A148					.25 .25	NO NO			
A 148W			P1-C23 P2-W8					.15 .19	NO NO		7, 18 4	
A 149	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 149B	2		E12-B SHLD A149					.25 .25	NO NO			
A 149W			P1-C24 P2-X3					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR D★		SHEET 41 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 150	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 150B	2		E12-B SHLD A150					.25 .25	NO NO			
A 150W			P1-C25 P2-X4					.15 .19	NO NO		7, 18 4	
A 151	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 151B	2		E12-B SHLD A151					.25 .25	NO NO			
A 151W			P1-D16 P2-X5					.15 .19	NO NO		7, 18 4	
A 152	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 152B	2		E22-B SHLD A152					.25 .25	NO NO			
A 152W			P1-D17 P3-X5					.15 .19	NO NO		7, 18 4	
A 153	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 153B	2		E13-B SHLD A153					.25 .25	NO NO			
A 153W			P1-D18 P3-A3					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR E		SHEET 42 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 154B	2		E13-B SHLD A154					.25 .25	NO NO			
A 154W			P1-D19 P3-A4					.15 .19	NO NO		7, 18 4	
A 155	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 155B	2		E13-B SHLD A155					.25 .25	NO NO			
A 155W			P1-D20 P3-A5					.15 .19	NO NO		7, 18 4	
A 156	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 156B	2		E13-B SHLD A156					.25 .25				
A 156W			P1-D21 P3-A6					.15 .19			7, 18 4	
A 157	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 157B	2		E13-B SHLD A157					.25 .25				
A 157W			P1-D22 P3-B1					.15 .19			7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR D	SHEET 43 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 158	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 158B	2		E13-B SHLD A158					.25 .25				
A 158W			P1-D23 P3-B2					.15 .19			7, 18 4	
A 159	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 159B	2		E13-B SHLD A159					.25 .25				
A 159W			P1-D24 P3-B3					.15 .19			7, 18 4	
A 160	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 160B	2		E13-B SHLD A160					.25 .25				
A 160W			P1-D25 P3-B4					.15 .19			7, 18 4	
A 161	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 161B	2		E13-B SHLD A161					.25 .25				
A 161W			P1-F16 P3-B5					.15 .19			7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR D	SHEET 44 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 162	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 162B	2		E13-B SHLD A162					.25 .25				
A 162W			P1-F17 P3-B6					.15 .19			7, 18 4	
A 163	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 163B	2		E13-B SHLD A163					.25 .25				
A 163W			P1-F18 P3-B7					.15 .19			7, 18 4	
A 164	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 164B	2		E13-B SHLD A164					.25 .25	NO NO			
A 164W			P1-F19 P3-B8					.15 .19	NO NO		7, 18 4	
A 165	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 165B	2		E13-B SHLD A165					.25 .25	NO NO			
A 165W			P1-F20 P3-C1					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR D	SHEET 45 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 166	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 166B	2		E14-B SHLD A166					.25 .25	NO NO			
A 166W			P1-F21 P3-C2					.15 .19	NO NO		7, 18 4	
A 167	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 167B	2		E14-B SHLD A167					.25 .25	NO NO			
A 167W			P1-F22 P3-C3					.15 .19	NO NO		7, 18 4	
A 168	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 168B	2		E14-B SHLD A168					.25 .25	NO NO			
A 168W			P1-F23 P3-C4					.15 .19	NO NO		7, 18 4	
A 169	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 169B	2		E14-B SHLD A169					.25 .25	NO NO			
A 169W			P1-F24 P3-C5					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR D	SHEET 46 OF 75

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 170	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 170B	2		E14-B SHLD A170					.25 .25	NO NO			
A 170W			P1-F25 P3-C6					.15 .19	NO NO		7, 18 4	
A 171	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 171B	2		E14-B SHLD A171					.25 .25	NO NO			
A 171W			P1-G16 P3-C7					.15 .19	NO NO		7, 18 4	
A 172	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 172B	2		E14-B SHLD A172					.25 .25	NO NO			
A 172W			P1-G17 P3-C8					.15 .19	NO NO		7, 18 4	
A 173	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 173B	2		E14-B SHLD A173					.25 .25	NO NO			
A 173W			P1-G18 P3-D1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR AD
SHEET 47 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 174	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 174B	2		E14-B SHLD A174					.25 .25	NO NO			
A 174W			P1-G19 P3-D2					.15 .19	NO NO		7, 18 4	
A 175	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 175B	2		E14-B SHLD A175					.25 .25	NO NO			
A 175W			P1-G20 P3-D3					.15 .19	NO NO		7, 18 4	
A 176	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 176B	2		E14-B SHLD A176					.25 .25	NO NO			
A 176W			P1-G21 P3-D4					.15 .19	NO NO		7, 18 4	
A 177	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 177B	2		E14-B SHLD A177					.25 .25	NO NO			
A 177W			P1-G22 P3-D5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR AD
SHEET 48 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 178	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 178B	2		E15-B SHLD A178					.25 .25	NO NO			
A 178W			P1-G23 P3-D6					.15 .19	NO NO		7, 18 4	
A 179	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 179B	2		E15-B SHLD A179					.25 .25	NO NO			
A 179W			P1-G24 P3-D7					.15 .19	NO NO		7, 18 4	
A 180	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 180B	2		E15-B SHLD A180					.25 .25	NO NO			
A 180W			P1-G25 P3-D8					.15 .19	NO NO		7, 18 4	
A 181	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 181B	2		E15-B SHLD A181					.25 .25	NO NO			
A 181W			P1-H16 P3-F1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR AD
SHEET 49 OF 75

MIL 2084 9-65

CABLE W556 6900079 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 182	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 182B	2		E15-B SHLD A182					.25 .25	NO NO			
A 182W			P1-H17 P3-F2					.15 .19	NO NO		7, 18 4	
A 183	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 183B	2		E15-B SHLD A183					.25 .25	NO NO			
A 183W			P1-H18 P3-F3					.15 .19	NO NO		7, 18 4	
A 184	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 184B	2		E15-B SHLD A184					.25 .25	NO NO			
A 184W			P1-H19 P3-F4					.15 .19	NO NO		7, 18 4	
A 185	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 185B	2		E15-B SHLD A185					.25 .25	NO NO			
A 185W			P1-H20 P3-F5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900079
SCALE-NONE
REV LTR F
SHEET 50 OF 75

MIL 2084 9-65

CABLE W556 6900079 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 186	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 186B	2		E15-B SHLD A186					.25 .25	NO NO			
A 186W			P1-H21 P3-F6					.15 .19	NO NO		7, 18 4	
A 187	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 187B	2		E15-B SHLD A187					.25 .25	NO NO			
A 187W			P1-H22 P3-F7					.15 .19	NO NO		7, 18 4	
A 188	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 188B	2		E15-B SHLD A188					.25 .25	NO NO			
A 188W			P1-H23 P3-F8					.15 .19	NO NO		7, 18 4	
A 189	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 189B	2		E15-B SHLD A189					.25 .25	NO NO			
A 189W			P1-H24 P3-G1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR F		SHEET 51 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 190	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 190B	2		E16-B SHLD A190					.25 .25	NO NO			
A 190W			P1-H25 P3-G2					.15 .19	NO NO		7, 18 4	
A 196	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 196B	2		E16-B SHLD A196					.25 .25	NO NO			
A 196W			P1-K21 P3-G8					.15 .19	NO NO		7, 18 4	
A 197	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 197B	2		E16-B SHLD A197					.25 .25	NO NO			
A 197W			P1-K22 P3-H1					.15 .19	NO NO		7, 18 4	
A 198	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 198B	2		E16-B SHLD A198					.25 .25	NO NO			
A 198W			P1-K23 P3-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR AD		SHEET 52 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 199B	2		E16-B SHLD A199					.25 .25	NO NO			
A 199W			P1-K24 P3-H3					.15 .19	NO NO		7, 18 4	
A 200	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 200B	2		E16-B SHLD A200					.25 .25	NO NO			
A 200W			P1-K25 P3-H4					.15 .19	NO NO		7, 18 4	
A 201	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 201B	2		E16-B SHLD A201					.25 .25	NO NO			
A 201W			P1-A26 P3-H5					.15 .19	NO NO		7, 18 4	
A 202	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 202B	2		E16-B SHLD A202					.25 .25	NO NO			
A 202W			P1-A27 P3-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR AD		SHEET 53 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 203	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 203B	2		E16-B SHLD A203					.25 .25	NO NO			
A 203W			P1-A28 P3-H7					.15 .19	NO NO		7, 18 4	
A 204	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 204B	2		E16-B SHLD A204					.25 .25	NO NO			
A 204W			P1-A29 P3-H8					.15 .19	NO NO		7, 18 4	
A 205	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 205B	2		E16-B SHLD A205					.25 .25	NO NO			
A 205W			P1-A30 P3-J1					.15 .19	NO NO		7, 18 4	
A 206	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 206B	2		E16-B SHLD A206					.25 .25	NO NO			
A 206W			P1-A31 P3-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900079	
SCALE-NONE	REV LTR AD		SHEET 54 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 207	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 207B	2		E17-B SHLD A207					.25 .25	NO NO			
A 207W			P1-A32 P3-J3					.15 .19	NO NO		7, 18 4	
A 208	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 208B	2		E17-B SHLD A208					.25 .25	NO NO			
A 208W			P1-A33 P3-J4					.15 .19	NO NO		7, 18 4	
A 211	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 211B	2		E17-B SHLD A211					.25 .25	NO NO			
A 211W			P1-B26 P3-J7					.15 .19	NO NO		7, 18 4	
A 212	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 212B	2		E17-B SHLD A212					.25 .25	NO NO			
A 212W			P1-B27 P3-J8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 55 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 213	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 213B	2		E17-B SHLD A213					.25 .25	NO NO			
A 213W			P1-B28 P3-K1					.15 .19	NO NO		7, 18 4	
A 214	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 214B	2		E17-B SHLD A214					.25 .25	NO NO			
A 214W			P1-B29 P3-K2					.15 .19	NO NO		7, 18 4	
A 215	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 215B	2		E17-B SHLD A215					.25 .25	NO NO			
A 215W			P1-B30 P3-K3					.15 .19	NO NO		7, 18 4	
A 216	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 216B	2		E17-B SHLD A216					.25 .25	NO NO			
A 216W			P1-B31 P3-K6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 56 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 217	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 217B	2		E17-B SHLD A217					.25 .25	NO NO			
A 217W			P1-B32 P3-K7					.15 .19	NO NO		7, 18 4	
A 218	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 218B	2		E17-B SHLD A218					.25 .25	NO NO			
A 218W			P1-B33 P3-K8					.15 .19	NO NO		7, 18 4	
A 219	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 219B	2		E17-B SHLD A219					.25 .25	NO NO			
A 219W			P1-B34 P3-L1					.15 .19	NO NO		7, 18 4	
A 220	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 220B	2		E17-B SHLD A220					.25 .25				
A 220W			P1-B35 P3-L2					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 57 OF 75

MIL 2084 9-65

CABLE W556 6900079 AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 221	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 221B	2		E18-B SHLD A221					.25 .25				
A 221W			P1-C26 P3-L7					.15 .19			7, 18 4	
A 222	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 222B	2		E18-B SHLD A222					.25 .25				
A 222W			P1-C27 P3-L8					.15 .19			7, 18 4	
A 223	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 223B	2		E18-B SHLD A223					.25 .25				
A 223W			P1-C28 P3-M1					.15 .19			7, 18 4	
A 224	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 224B	2		E18-B SHLD A224					.25 .25				
A 224W			P1-C29 P3-M2					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR AD | SHEET 58 OF 75

MIL 2084 9-65

CABLE W556 6900079 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 225	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 225B	2		E18-B SHLD A225					.25 .25				
A 225W			P1-C30 P3-M3					.15 .19			7, 18 4	
A 226	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 226B	2		E18-B SHLD A226					.25 .25				
A 226W			P1-C31 P3-M6					.15 .19			7, 18 4	
A 227	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 227B	2		E18-B SHLD A227					.25 .25				
A 227W			P1-C32 P3-M7					.15 .19			7, 18 4	
A 228	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 228B	2		E18-B SHLD A228					.25 .25	NO NO			
A 228W			P1-C33 P3-M8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR F | SHEET 59 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 229	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 229B	2		E18-B SHLD A229					.25 .25	NO NO			
A 229W			P1-C34 P3-N1					.15 .19	NO NO		7, 18 4	
A 230	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 230B	2		E18-B SHLD A230					.25 .25	NO NO			
A 230W			P1-C35 P3-N2					.15 .19	NO NO		7, 18 4	
A 231	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 231B	2		E18-B SHLD A231					.25 .25	NO NO			
A 231W			P1-D26 P3-N3					.15 .19	NO NO		7, 18 4	
A 232	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 232B	2		E18-B SHLD A232					.25 .25	NO NO			
A 232W			P1-D27 P3-N4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR *D | SHEET 60 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 233	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 233B	2		E19-B SHLD A233					.25 .25	NO NO			
A 233W			P1-D28 P3-N5					.15 .19	NO NO		7, 18 4	
A 234	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 234B	2		E19-B SHLD A234					.25 .25	NO NO			
A 234W			P1-D29 P3-N6					.15 .19	NO NO		7, 18 4	
A 235	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 235B	2		E19-B SHLD A235					.25 .25	NO NO			
A 235W			P1-D30 P3-N7					.15 .19	NO NO		7, 18 4	
A 236	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 236B	2		E19-B SHLD A236					.25 .25	NO NO			
A 236W			P1-D31 P3-N8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR *D | SHEET 61 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 237	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 237B	2		E19-B SHLD A237					.25 .25	NO NO			
A 237W			P1-D32 P3-P1					.15 .19	NO NO		7, 18 4	
A 238	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 238B	2		E19-B SHLD A238					.25 .25	NO NO			
A 238W			P1-D33 P3-P2					.15 .19	NO NO		7, 18 4	
A 239	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 239B	2		E19-B SHLD A239					.25 .25	NO NO			
A 239W			P1-D34 P3-P3					.15 .19	NO NO		7, 18 4	
A 240	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 240B	2		E19-B SHLD A240					.25 .25	NO NO			
A 240W			P1-D35 P3-P4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR *D | SHEET 62 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 241	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 241B	2		E19-B SHLD A241					.25 .25	NO NO			
A 241W			P1-F26 P3-P5					.15 .19	NO NO		7, 18 4	
A 242	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 242B	2		E19-B SHLD A242					.25 .25	NO NO			
A 242W			P1-F27 P3-P6					.15 .19	NO NO		7, 18 4	
A 243	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 243B	2		E19-B SHLD A243					.25 .25	NO NO			
A 243W			P1-F28 P3-P7					.15 .19	NO NO		7, 18 4	
A 244	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 244B	2		E19-B SHLD A244					.25 .25	NO NO			
A 244W			P1-F29 P3-P8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR A D | SHEET 63 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 245	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 245B	2		E20-B SHLD A245					.25 .25	NO NO			
A 245W			P1-F30 P3-R1					.15 .19	NO NO		7, 18 4	
A 246	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 246B	2		E20-B SHLD A246					.25 .25	NO NO			
A 246W			P1-F31 P3-R2					.15 .19	NO NO		7, 18 4	
A 247	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 247B	2		E20-B SHLD A247					.25 .25	NO NO			
A 247W			P1-F32 P3-R3					.15 .19	NO NO		7, 18 4	
A 248	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 248B	2		E20-B SHLD A248					.25 .25	NO NO			
A 248W			P1-F33 P3-R4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR X D | SHEET 64 OF 75

MIL 2084 9-65

CABLE W556 6900079 -AD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 249	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 249B	2		E20-B SHLD A249					.25 .25	NO NO			
A 249W			P1-F34 P3-R5					.15 .19	NO NO		7, 18 4	
A 250	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 250B	2		E20-B SHLD A250					.25 .25	NO NO			
A 250W			P1-F35 P3-R6					.15 .19	NO NO		7, 18 4	
A 251	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 251B	2		E20-B SHLD A251					.25 .25	NO NO			
A 251W			P1-G26 P3-R7					.15 .19	NO NO		7, 18 4	
A 252	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 252B	2		E20-B SHLD A252					.25 .25	NO NO			
A 252W			P1-G27 P3-R8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR X D | SHEET 65 OF 75

MIL 2084 9-65

CABLE W556 6900079 *D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 253	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 253B	2		E20-B SHLD A253					.25 .25	NO NO			
A 253W			P1-G28 P3-S1					.15 .19	NO NO		7, 18 4	
A 254	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 254B	2		E20-B SHLD A254					.25 .25	NO NO			
A 254W			P1-G29 P3-S2					.15 .19	NO NO		7, 18 4	
A 255	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 255B	2		E20-B SHLD A255					.25 .25	NO NO			
A 255W			P1-G30 P3-S3					.15 .19	NO NO		7, 18 4	
A 256	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 256B	2		E20-B SHLD A256					.25 .25	NO NO			
A 256W			P1-G31 P3-S4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900079

SCALE-NONE | REV LTR X D | SHEET 66 OF 75

MIL 2084 9-65

CABLE W556 6900079 ★D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 257	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 257B	2		E21-B SHLD A257					.25 .25	NO NO			
A 257W			P1-G32 P3-S5					.15 .19	NO NO		7, 18 4	
A 258	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 258B	2		E21-B SHLD A258					.25 .25	NO NO			
A 258W			P1-G33 P3-S6					.15 .19	NO NO		7, 18 4	
A 259	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 259B	2		E21-B SHLD A259					.25 .25	NO NO			
A 259W			P1-G34 P3-S7					.15 .19	NO NO		7, 18 4	
A 260	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 260B	2		E21-B SHLD A260					.25 .25	NO NO			
A 260W			P1-G35 P3-S8					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR D	SHEET

MIL 2084 9-65

X 67 OF 75

D
CABLE W556 6900079 ★

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 261	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 261B	2		E21-B SHLD A261					.25 .25	NO NO			
A 261W			P1-H26 P3-T1					.15 .19	NO NO		7, 18 4	
A 262	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 262B	2		E21-B SHLD A262					.25 .25	NO NO			
A 262W			P1-H27 P3-T2					.15 .19	NO NO		7, 18 4	
A 263	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 263B	2		E21-B SHLD A263					.25 .25	NO NO			
A 263W			P1-H28 P3-T3					.15 .19	NO NO		7, 18 4	
A 264	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 264B	2		E21-B SHLD A264					.25 .25	NO NO			
A 264W			P1-H29 P3-T4					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR X D	SHEET 68 OF 75

MIL 2084 9-65

CABLE W556 6900079 ★D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 265	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 265B	2		E21-B SHLD A265					.25 .25	NO NO			
A 265W			P1-H30 P3-T5					.15 .19	NO NO		7, 18 4	
A 266	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 266B	2		E21-B SHLD A266					.25 .25	NO NO			
A 266W			P1-H31 P3-T6					.15 .19	NO NO		7, 18 4	
A 267	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 267B	2		E21-B SHLD A267					.25 .25	NO NO			
A 267W			P1-H32 P3-T7					.15 .19	NO NO		7, 18 4	
A 268	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 268B	2		E21-B SHLD A268					.25 .25	NO NO			
A 268W			P1-H33 P3-T8					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR X D	SHEET 69 OF 75

MIL 2084 9-65

CABLE W556 6900079 ★D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 269	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 269B	2		E22-B SHLD A269					.25 .25	NO NO			
A 269W			P1-H34 P3-U1					.15 .19	NO NO		7, 18 4	
A 270	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 270B	2		E22-B SHLD A270					.25 .25	NO NO			
A 270W			P1-H35 P3-U2					.15 .19	NO NO		7, 18 4	
A 271	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 271B	2		E22-B SHLD A271					.25 .25	NO NO			
A 271W			P1-K26 P3-U3					.15 .19	NO NO		7, 18 4	
A 272	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 272B	2		E22-B SHLD A272					.25 .25	NO NO			
A 272W			P1-K27 P3-U4					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900079
SCALE-NONE	REV LTR X D	SHEET 70 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 BD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 273	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 273B	2		E22-B SHLD A273					.25 .25	NO NO			
A 273W			P1-K28 P3-U5					.15 .19	NO NO		7, 18 4	
A 274	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 274B	2		E22-B SHLD A274					.25 .25	NO NO			
A 274W			P1-K29 P3-U6					.15 .19	NO NO		7, 18 4	
A 275	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 275B	2		E22-B SHLD A275					.25 .25	NO NO			
A 275W			P1-K30 P3-U7					.15 .19	NO NO		7, 18 4	
A 276	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 276B	2		E22-B SHLD A276					.25 .25	NO NO			
A 276W			P1-K31 P3-U8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR BD	SHEET 71 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 BD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 277	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 277B	2		E22-B SHLD A277					.25 .25	NO NO			
A 277W			P1-K32 P3-V1					.15 .19	NO NO		7, 18 4	
A 278	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 278B	2		E22-B SHLD A278					.25 .25	NO NO			
A 278W			P1-K33 P3-V2					.15 .19	NO NO		7, 18 4	
A 279	6		E1-BB E23-B					.25 .25	NO NO			
A 280	6		E2-BB E23-B					.25 .25	NO NO			
A 281	6		E3-BB E23-B					.25 .25	NO NO			
A 282	6		E4-BB E23-B					.25 .25	NO NO			
A 283	6		E5-BB E23-B					.25 .25	NO NO			
A 284	6		E6-BB E23-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR BD	SHEET 72 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 BD

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 285	6		E7-BB E23-B					.25 .25	NO NO			
A 286	6		E8-BB E23-B					.25 .25	NO NO			
A 287	6		E9-BB E23-B					.25 .25	NO NO			
A 288	6		E10-BB E23-B					.25 .25	NO NO			
A 289	6		E11-BB E23-B					.25 .25	NO NO			
A 290	6		E12-BB E23-B					.25 .25	NO NO			
A 291	6		E13-BB E24-B					.25 .25	NO NO			
A 292	6		E14-BB E24-B					.25 .25	NO NO			
A 293	6		E15-BB E24-B					.25 .25	NO NO			
A 294	6		E16-BB E24-B					.25 .25	NO NO			
A 295	6		E17-BB E24-B					.25 .25	NO NO			
A 296	6		E18-BB E24-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR BD	SHEET 73 OF 75

MIL 2084 9-65

CABLE W556 ▼ 6900079 BD

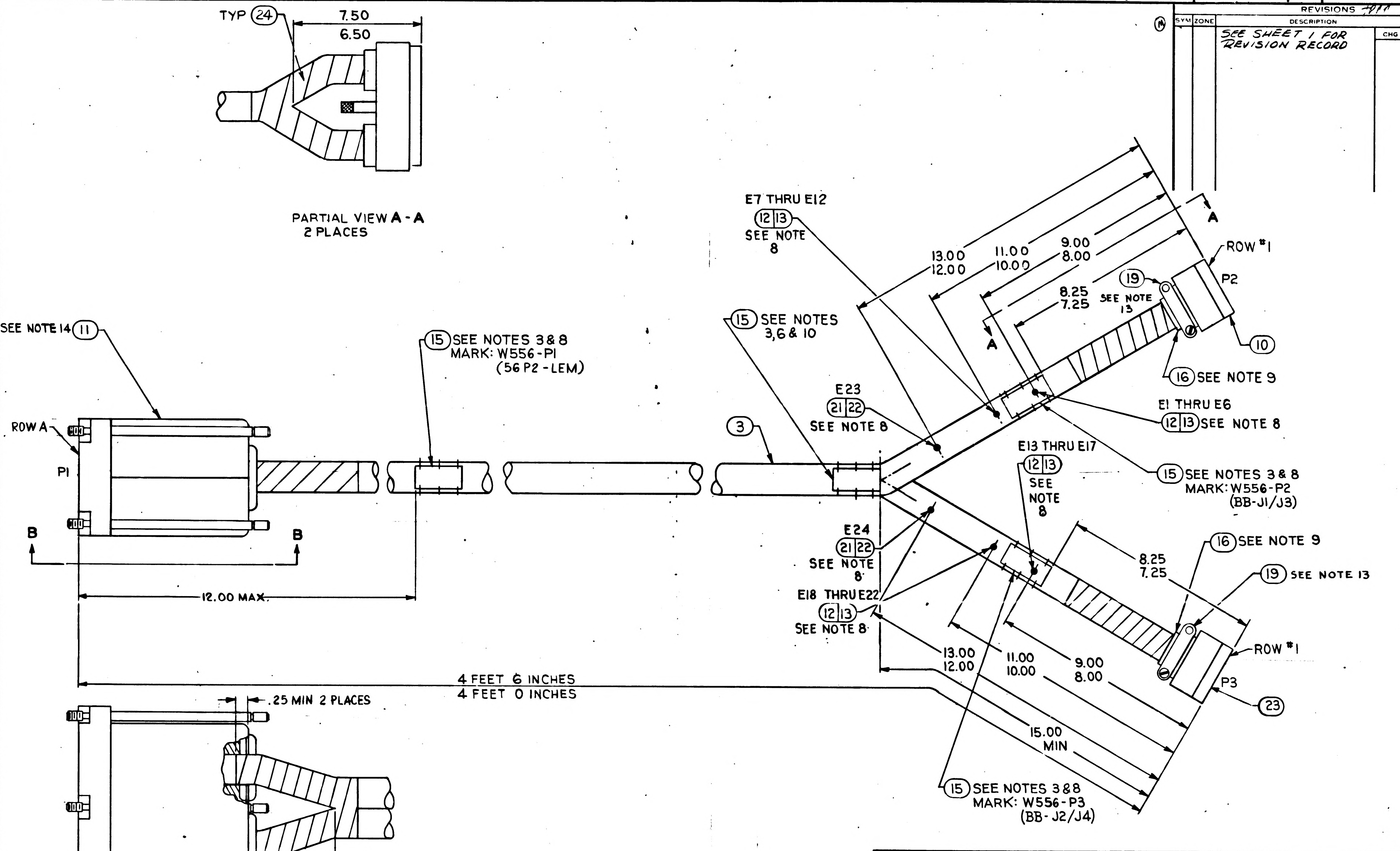
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 297	6		E19-BB E24-B					.25 .25	NO NO			
A 298	6		E20-BB E24-B					.25 .25	NO NO			
A 299	6		E21-BB E24-B					.25 .25	NO NO			
A 300	6		E22-BB E24-B					.25 .25	NO NO			
A 301	5		E23-BB P2-X6					.25 .19	NO NO		 25	
A 302	5		E24-BB P3-X6					.25 .19	NO NO		 25	

SIZE	CODE IDENT NO.	
A	99974	6900079
SCALE-NONE	REV LTR BD	SHEET 74 OF 75

MIL 2084 9-65

6900079

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
		SEE SHEET 1 FOR REVISION RECORD			



TYP 24
7.50
6.50
PARTIAL VIEW A-A
2 PLACES
E7 THRU E12
12 13
SEE NOTE 8
13.00
12.00
11.00
10.00
9.00
8.00
A
ROW #1
P2
19
8.25
7.25
SEE NOTE 13
A
10
16 SEE NOTE 9
SEE NOTE 14 11
15 SEE NOTES 3&8
MARK: W556-P1
(56 P2 - LEM)
15 SEE NOTES 3,6 & 10
E23
21 22
SEE NOTE 8
E1 THRU E6
12 13 SEE NOTE 8
ROW A
P1
3
E13 THRU E17
12 13
SEE NOTE 8
15 SEE NOTES 3 & 8
MARK: W556-P2
(BB-J1/J3)
B
B
E24
21 22
SEE NOTE 8
16 SEE NOTE 9
8.25
7.25
19 SEE NOTE 13
E18 THRU E22
12 13
SEE NOTE 8
12.00 MAX.
13.00
12.00
11.00
10.00
9.00
8.00
ROW #1
P3
4 FEET 6 INCHES
4 FEET 0 INCHES
.25 MIN 2 PLACES
23
15.00 MIN
15 SEE NOTES 3&8
MARK: W556-P3
(BB-J2/J4)
6.00 APPROX
PARTIAL VIEW B-B

6900077-011	6900077-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN J. Kilvinger DATE 9 DEC 65
CHECKED J.Naylor 13 DEC 65
APPROVAL L Goldman 5/3/66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W556

SIZE D
CODE IDENT NO. 99974
6900079
SCALE NONE
SHEET 75 OF 75

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV. A WITH CHG. PER MXC 209931	16 MAR 66	DKD
C	REVISED PER MXC 210437	31 MAR 66	R.W.T.
D	REVISED PER MXC 211614	22 APR 66	RLP RWH
E	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	J.H.P. EF

REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
REV STATUS OF SHEETS REV						E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN 2 MAR 66
DAY MO YR
CHECKER 3 MAR 66
ENGINEER 3 MAR 66
APPROVAL 5/3/66
CONTR NO. NAS9-497

NASA APPROVAL
MIT APPROVAL 5/10

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED W557

SIZE A
CODE IDENT. NO 99974
6900080
SCALE NONE
SHEET 1 OF 75

MIL 1377A6 12-65

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
48	E																
49	E																
50	E																
51	E																
52	E																
53	E																
54	E																
55	E																
56	E																
57	E																
58	E																
59	E																
60	E																
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62	E																
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68	E																
69	E																
70	E																
71	E																
72	E																
73	E																
74	E																
75	E																

SIZE A	CODE IDENT. NO. 99974	6900080
SCALE NONE	REV LTR E	SHEET 2 OF 75

MIL 1377A3 8-65

NOTE NUMBER — GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER -
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

[redacted]

3 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 17.

4 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

5 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

7 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - FROM END SHIELD
B - TO END SHIELD
W - WHITE

8 MARK REFERENCE DESIGNATIONS SHOWN PER ND1002019, HOT IMPRESSION STAMPING, USING .12 BLACK CHARACTERS CENTRALIZED.

9 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 16 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP

10 SERIALIZE PER ND1002032

11 LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES

12 ASSEMBLE PER ND1002032

NOTE NUMBER — GENERAL NOTES DESCRIPTION

13 AT ASSEMBLY OF ITEM 19 REMOVE 4 SELF-LOCKING NUTS SECURING LOCATING PINS TO CONNECTOR AND DISCARD. ATTACH ITEM 19 USING LOCATING PINS.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900080-001	WIRE ND1002181 TYPE 1 CLASS 4 22 AWG WHT JKT WHT 1048 FT TOTAL LENGTH
	2	1	6900080-002	WIRE ND1002181 TYPE 1 CLASS 1 24 AWG WHT 131 FT TOTAL LENGTH
	3	1	6900080-006	ZIPPER TUBING PER ND1002155 TYPE 4 GREY 2.5, 2.5 DIA 4 FT TOTAL LENGTH 2 CHANNEL
4	4	262	1016369-421	CONTACT, SOCKET
	5	1	6900080-005	WIRE ND1002181 TYPE 1 CLASS 1 16 AWG WHT 2 FT TOTAL LENGTH
	6	1	6900080-004	WIRE ND1002181 TYPE 1 CLASS 1 20 AWG WHT 8 FT TOTAL LENGTH
4	7	262	1897300-002	CONTACT, SPRING SOCKET
4	8	262	1010763-002	SOLDER SLEEVE
4	9	524	1010490-232	INSULATION SLEEVING SHRINK FIT
4	10	1	2901434-011 ~~1897336-001~~	CONNECTOR
4	11	1	6900087-011	CONNECTOR
4	12	22	1016006-002	SPLICE REDUCER
4	13	22	1010490-258	INSULATION SLEEVING SHRINK FIT
	14		1015902-003	DELETED
4	15	4	1016128-021	BAND IDENTIFICATION

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	16	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A, CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	17	AR	MIL-T-713B TYPE P CLASS 2,BLK	LACING TAPE
4	18	262	1015864-232	INSULATION SLEEVING, ELECT.
4	19	2	1897391	CLAMP, CABLE DUAL ENTRY
	20		1010490-166	DELETED
4	21	2	1016006-004	SPLICE REDUCER
4	22	2	1010490-342	INSULATION SLEEVING SHRINK FIT
4	23	1	2901434-021 ~~1897336-002~~	CONNECTOR
	24	AR	MIL-I-15126 TYPE ACT	INSULATION TAPE ELEC PRESSURE SENSITIVE THERMO SETTING ADHESIVE, .75 + OR -.03 WIDE (ES2716 TYPE C)
	25	2	1016369-721	CONTACT, SOCKET

CABLE W557
6900080
E ~~B~~

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	3	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A	3B	2		E1-B SHLD A3					.25 .25	NO NO			
A	3W			P1-A3 P2-A5					.15 .19	NO NO		7, 18 4	
A	4	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A	4B	2		E1-B SHLD A4					.25 .25	NO NO			
A	4W			P1-A4 P2-A6					.15 .19	NO NO		7, 18 4	
A	5	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A	5B	2		E1-B SHLD A5					.25 .25	NO NO			
A	5W			P1-A5 P2-B1					.15 .19	NO NO		7, 18 4	
A	6	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A	6B	2		E1-B SHLD A6					.25 .25	NO NO			
A	6W			P1-A6 P2-B2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 7 OF 75
MIL 2084 9-65

CABLE W557
6900080
E ~~B~~

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	7	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A	7B	2		E1-B SHLD A7					.25 .25	NO NO			
A	7W			P1-A7 P2-B3					.15 .19	NO NO		7, 18 4	
A	8	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A	8B	2		E1-B SHLD A8					.25 .25	NO NO			
A	8W			P1-A8 P2-B4					.15 .19	NO NO		7, 18 4	
A	9	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	9B	2		E1-B SHLD A9					.25 .25	NO NO			
A	9W			P1-A9 P2-B5					.15 .19	NO NO		7, 18 4	
A	10	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	10B	2		E1-B SHLD A10					.25 .25	NO NO			
A	10W			P1-A10 P2-B6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 8 OF 75
MIL 2084 9-65

CABLE W557
6900080
E ~~B~~

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	11	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	11B	2		E1-B SHLD A11					.25 .25	NO NO			
A	11W			P1-A11 P2-B7					.15 .19	NO NO		7, 18 4	
A	12	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	12B	2		E1-B SHLD A12					.25 .25	NO NO			
A	12W			P1-A12 P2-B8					.15 .19	NO NO		7, 18 4	
A	13	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	13B	2		E1-B SHLD A13					.25 .25	NO NO			
A	13W			P1-A13 P2-C1					.15 .19	NO NO		7, 18 4	
A	14	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	14B	2		E1-B SHLD A14					.25 .25	NO NO			
A	14W			P1-A14 P2-C2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 9 OF 75
MIL 2084 9-65

CABLE W557
6900080
E ~~B~~

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	15	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	15B	2		E2-B SHLD A15					.25 .25	NO NO			
A	15W			P1-A15 P2-C3					.15 .19	NO NO		7, 18 4	
A	16	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	16B	2		E2-B SHLD A16					.25 .25	NO NO			
A	16W			P1-B1 P2-C4					.15 .19	NO NO		7, 18 4	
A	17	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	17B	2		E2-B SHLD A17					.25 .25	NO NO			
A	17W			P1-B2 P2-C5					.15 .19	NO NO		7, 18 4	
A	18	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	18B	2		E2-B SHLD A18					.25 .25				
A	18W			P1-B3 P2-C6					.15 .19			7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 10 OF 75
MIL 2084 9-65

CABLE W557

6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-B4 P2-C7					.15 .19	NO NO		7, 18 4	
A 20	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 20B	2		E2-B SHLD A20					.25 .25	NO NO			
A 20W			P1-B5 P2-C8					.15 .19	NO NO		7, 18 4	
A 21	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 21B	2		E2-B SHLD A21					.25 .25	NO NO			
A 21W			P1-B6 P2-D1					.15 .19	NO NO		7, 18 4	
A 22	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 22B	2		E2-B SHLD A22					.25 .25	NO NO			
A 22W			P1-B7 P2-D2					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 11 OF 75	

MIL 2084 9-65

CABLE W557

6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 23B	2		E2-B SHLD A23					.25 .25	NO NO			
A 23W			P1-B8 P2-D3					.15 .19	NO NO		7, 18 4	
A 24	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 24B	2		E2-B SHLD A24					.25 .25	NO NO			
A 24W			P1-B9 P2-D4					.15 .19	NO NO		7, 18 4	
A 25	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 25B	2		E2-B SHLD A25					.25 .25	NO NO			
A 25W			P1-B10 P2-D5					.15 .19	NO NO		7, 18 4	
A 26	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 26B	2		E2-B SHLD A26					.25 .25	NO NO			
A 26W			P1-B11 P2-D6					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 12 OF 75	

MIL 2084 9-65

CABLE W557

6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 27B	2		E3-B SHLD A27					.25 .25	NO NO			
A 27W			P1-B12 P2-D7					.15 .19	NO NO		7, 18 4	
A 28	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 28B	2		E3-B SHLD A28					.25 .25	NO NO			
A 28W			P1-B13 P2-D8					.15 .19	NO NO		7, 18 4	
A 29	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 29B	2		E3 SHLD A29					.25 .25	NO NO			
A 29W			P1-B14 P2-E1					.15 .19	NO NO		7, 18 4	
A 30	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 30B	2		E3 SHLD A30					.25 .25	NO NO			
A 30W			P1-B15 P2-E2					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 13 OF 75	

MIL 2084 9-65

CABLE W557

6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31	1				6.75 6.75	6.50 6.50				8,7 A,6A		
A 31B	2		E3 SHLD A31					.25 .25	NO NO			
A 31W			P1-C1 P2-E3					.15 .19	NO NO		7, 18 4	
A 32	1				6.75 6.75	6.50 6.50				8,7 A,6A	9 8, 9	
A 32B	2		E3 SHLD A32					.25 .25	NO NO			
A 32W			P1-C2 P2-E4					.15 .19	NO NO		7, 18 4	
A 33	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 33B	2		E3-B SHLD A33					.25 .25	NO NO			
A 33W			P1-C3 P2-E5					.15 .19	NO NO		7, 18 4	
A 34	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 34B	2		E3-B SHLD A34					.25 .25	NO NO			
A 34W			P1-C4 P2-E6					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 14 OF 75	

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 35	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 35B	2		E3-B SHLD A35					.25 .25	NO NO			
A 35W			P1-C5 P2-E7					.15 .19	NO NO		7, 18 4	
A 36	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 36B	2		E3-B SHLD A36					.25 .25	NO NO			
A 36W			P1-C6 P2-E8					.15 .19	NO NO		7, 18 4	
A 37	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 37B	2		E3-B SHLD A37					.25 .25	NO NO			
A 37W			P1-C7 P2-F1					.15 .19	NO NO		7, 18 4	
A 38	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 38B	2		E3-B SHLD A38					.25 .25	NO NO			
A 38W			P1-C8 P2-F2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 15 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 39	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 39B	2		E4-B SHLD A39					.25 .25	NO NO			
A 39W			P1-C9 P2-F3					.15 .19	NO NO		7, 18 4	
A 40	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 40B	2		E4-B SHLD A40					.25 .25	NO NO			
A 40W			P1-C10 P2-F4					.15 .19	NO NO		7, 18 4	
A 41	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 41B	2		E4-B SHLD A41					.25 .25	NO NO			
A 41W			P1-C11 P2-F5					.15 .19	NO NO		7, 18 4	
A 42	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 42B	2		E4-B SHLD A42					.25 .25	NO NO			
A 42W			P1-C12 P2-F6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 16 OF 75

MIL 2084 9-65

CABLE W557 6900060 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 43B	2		E4-B SHLD A43					.25 .25	NO NO			
A 43W			P1-C13 P2-F7					.15 .19	NO NO		7, 18 4	
A 44	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 44B	2		E4-B SHLD A44					.25 .25	NO NO			
A 44W			P1-C14 P2-F8					.15 .19	NO NO		7, 18 4	
A 45	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 45B	2		E4-B SHLD A45					.25 .25	NO NO			
A 45W			P1-C15 P2-G1					.15 .19	NO NO		7, 18 4	
A 46	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 46B	2		E4-B SHLD A46					.25 .25	NO NO			
A 46W			P1-D1 P2-G2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 17 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 47B	2		E4-B SHLD A47					.25 .25	NO NO			
A 47W			P1-D2 P2-G3					.15 .19	NO NO		7, 18 4	
A 48	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 48B	2		E4-B SHLD A48					.25 .25	NO NO			
A 48W			P1-D3 P2-G4					.15 .19	NO NO		7, 18 4	
A 49	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 49B	2		E4-B SHLD A49					.25 .25	NO NO			
A 49W			P1-D4 P2-G5					.15 .19	NO NO		7, 18 4	
A 50	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 50B	2		E4-B SHLD A50					.25 .25	NO NO			
A 50W			1-D5 P2-G6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 18 OF 75

MIL 2084 9-65

CABLE W557 6900080 E8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 51	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 51B	2		E5-B SHLD A51					.25 .25	NO NO			
A 51W			P1-D6 P2-G7					.15 .19	NO NO		7, 18 4	
A 52	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 52B	2		E5-B SHLD A52					.25 .25	NO NO			
A 52W			P1-D7 P2-G8					.15 .19	NO NO		7, 18 4	
A 53	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 53B	2		E5-B SHLD A53					.25 .25	NO NO			
A 53W			P1-D8 P2-H1					.15 .19	NO NO		7, 18 4	
A 54	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 54B	2		E5-B SHLD A54					.25 .25	NO NO			
A 54W			P1-D9 P2-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR	8E	SHEET 19 OF 75

MIL 2084 9-65

CABLE W557 6900080 E8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 55	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 55B	2		E5-B SHLD A55					.25 .25	NO NO			
A 55W			P1-D10 P2-H3					.15 .19	NO NO		7, 18 4	
A 56	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 56B	2		E5-B SHLD A56					.25 .25	NO NO			
A 56W			P1-D11 P2-H4					.15 .19	NO NO		7, 18 4	
A 57	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 57B	2		E5-B SHLD A57					.25 .25	NO NO			
A 57W			P1-D12 P2-H5					.15 .19	NO NO		7, 18 4	
A 58	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 58B	2		E5-B SHLD A58					.25 .25	NO NO			
A 58W			P1-D13 P2-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR	8E	SHEET 20 OF 75

MIL 2084 9-65

CABLE W557 6900080 E8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 59	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 59B	2		E5-B SHLD A59					.25 .25	NO NO			
A 59W			P1-D14 P2-H7					.15 .19	NO NO		7, 18 4	
A 60	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 60B	2		E5-B SHLD A60					.25 .25	NO NO			
A 60W			P1-D15 P2-H8					.15 .19	NO NO		7, 18 4	
A 61	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 61B	2		E5-B SHLD A61					.25 .25	NO NO			
A 61W			P1-F1 P2-J1					.15 .19	NO NO		7, 18 4	
A 62	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 62B	2		E5-B SHLD A62					.25 .25	NO NO			
A 62W			P1-F2 P2-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR	8E	SHEET 21 OF 75

MIL 2084 9-65

CABLE W557 6900080 E8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 63B	2		E6-B SHLD A63					.25 .25	NO NO			
A 63W			P1-F3 P2-J3					.15 .19	NO NO		7, 18 4	
A 64	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 64B	2		E6-B SHLD A64					.25 .25	NO NO			
A 64W			P1-F4 P2-J4					.15 .19	NO NO		7, 18 4	
A 65	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 65B	2		E6-B SHLD A65					.25 .25	NO NO			
A 65W			P1-F5 P2-J5					.15 .19	NO NO		7, 18 4	
A 66	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 66B	2		E6-B SHLD A66					.25 .25	NO NO			
A 66W			P1-F6 P2-J6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR	8E	SHEET 22 OF 75

MIL 2084 9-65

CABLE W557

6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 67	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 67B	2		E6-B SHLD A67					.25 .25	NO NO			
A 67W			P1-F7 P2-J7					.15 .19	NO NO		7, 18 4	
A 68	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 68B	2		E6-B SHLD A68					.25 .25	NO NO			
A 68W			P1-F8 P2-J8					.15 .19	NO NO		7, 18 4	
A 69	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 69B	2		E6-B SHLD A69					.25 .25	NO NO			
A 69W			P1-F9 P2-K1					.15 .19	NO NO		7, 18 4	
A 70	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 70B	2		E6-B SHLD A70					.25 .25	NO NO			
A 70W			P1-F10 P2-K2					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 23 OF 75

MIL 2084 9-65

CABLE W557

6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 71	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 71B	2		E6-B SHLD A71					.25 .25	NO NO			
A 71W			P1-F11 P2-K3					.15 .19	NO NO		7, 18 4	
A 72	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 72B	2		E6-B SHLD A72					.25 .25	NO NO			
A 72W			P1-F12 P2-K6					.15 .19	NO NO		7, 18 4	
A 73	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 73B	2		E6-B SHLD A73					.25 .25	NO NO			
A 73W			P1-F13 P2-K7					.15 .19	NO NO		7, 18 4	
A 74	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 74B	2		E6-B SHLD A74					.25 .25	NO NO			
A 74W			P1-F14 P2-K8					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 24 OF 75

MIL 2084 9-65

CABLE W557

6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 75B	2		E7-B SHLD A75					.25 .25	NO NO			
A 75W			P1-F15 P2-L1					.15 .19	NO NO		7, 18 4	
A 76	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 76B	2		E7-B SHLD A76					.25 .25	NO NO			
A 76W			P1-G1 P2-L2					.15 .19	NO NO		7, 18 4	
A 77	1				7.75 6.75	7.00 6.00				B,7 A,6A	9 8, 9	
A 77B	2		E7-B SHLD A77					.25 .25	NO NO			
A 77W			P1-G2 P2-L7					.15 .19	NO NO		7, 18 4	
A 78	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 78B	2		E7-B SHLD A78					.25 .25	NO NO			
A 78W			P1-G3 P2-L8					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 25 OF 75

MIL 2084 9-65

CABLE W557

6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 79B	2		E7-B SHLD A79					.25 .25	NO NO			
A 79W			P1-G4 P2-M1					.15 .19	NO NO		7, 18 4	
A 80	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 80B	2		E7-B SHLD A80					.25 .25	NO NO			
A 80W			P1-G5 P2-M2					.15 .19	NO NO		7, 18 4	
A 81	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 81B	2		E7-B SHLD A81					.25 .25	NO NO			
A 81W			P1-G6 P2-M3					.15 .19	NO NO		7, 18 4	
A 82	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 82B	2		E7-B SHLD A82					.25 .25	NO NO			
A 82W			P1-G7 P2-M6					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 26 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 83	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 83B	2		E7-B SHLD A83					.25 .25	NO NO			
A 83W			P1-G8 P2-M7					.15 .19	NO NO		7, 18 4	
A 84	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 84B	2		E7-B SHLD A84					.25 .25	NO NO			
A 84W			P1-G9 P2-M8					.15 .19	NO NO		7, 18 4	
A 85	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 85B	2		E7-B SHLD A85					.25 .25	NO NO			
A 85W			P1-G10 P2-N1					.15 .19	NO NO		7, 18 4	
A 86	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 86B	2		E7-B SHLD A86					.25 .25	NO NO			
A 86W			P1-G11 P2-N2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 27 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 87B	2		E8-B SHLD A87					.25 .25	NO NO			
A 87W			P1-G12 P2-N3					.15 .19	NO NO		7, 18 4	
A 88	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 88B	2		E8-B SHLD A88					.25 .25	NO NO			
A 88W			P1-G13 P2-N4					.15 .19	NO NO		7, 18 4	
A 89	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 89B	2		E8-B SHLD A89					.25 .25	NO NO			
A 89W			P1-G14 P2-N5					.15 .19	NO NO		7, 18 4	
A 90	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 90B	2		E8-B SHLD A90					.25 .25	NO NO			
A 90W			P1-G15 P2-N6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 28 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 91B	2		E8-B SHLD A91					.25 .25	NO NO			
A 91W			P1-H1 P2-N7					.15 .19	NO NO		7, 18 4	
A 92	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 92B	2		E8-B SHLD A92					.25 .25	NO NO			
A 92W			P1-H2 P2-N8					.15 .19	NO NO		7, 18 4	
A 93	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 93B	2		E8-B SHLD A93					.25 .25	NO NO			
A 93W			P1-H3 P2-P1					.15 .19	NO NO		7, 18 4	
A 94	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 94B	2		E8-B SHLD A94					.25 .25	NO NO			
A 94W			P1-H4 P2-P2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 29 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 95B	2		E8-B SHLD A95					.25 .25	NO NO			
A 95W			P1-H5 P2-P3					.15 .19	NO NO		7, 18 4	
A 96	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 96B	2		E8-B SHLD A96					.25 .25	NO NO			
A 96W			P1-H6 P2-P4					.15 .19	NO NO		7, 18 4	
A 97	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 97B	2		E8-B SHLD A97					.25 .25	NO NO			
A 97W			P1-H7 P2-P5					.15 .19	NO NO		7, 18 4	
A 98	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 98B	2		E8-B SHLD A98					.25 .25	NO NO			
A 98W			P1-H8 P2-P6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 30 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 99	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 99B	2		E9-B SHLD A99					.25 .25	NO NO			
A 99W			P1-H9 P2-P7					.15 .19	NO NO		7, 18 4	
A 100	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 100B	2		E9-B SHLD A100					.25 .25	NO NO			
A 100W			P1-H10 P2-P8					.15 .19	NO NO		7, 18 4	
A 101	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 101B	2		E9-B SHLD A101					.25 .25	NO NO			
A 101W			P1-H11 P2-R1					.15 .19	NO NO		7, 18 4	
A 102	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 102B	2		E9-B SHLD A102					.25 .25	NO NO			
A 102W			P1-H12 P2-R2					.15 .19	NO NO		7, 18	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 31 OF 75

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 103B	2		E9-B SHLD A103					.25 .25	NO NO			
A 103W			P1-H13 P2-R3					.15 .19	NO NO		7, 18 4	
A 104	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 104B	2		E9-B SHLD A104					.25 .25	NO NO			
A 104W			P1-H14 P2-R4					.15 .19	NO NO		7, 18 4	
A 105	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 105B	2		E9-B SHLD A105					.25 .25	NO NO			
A 105W			P1-H15 P2-R5					.15 .19	NO NO		7, 18 4	
A 108	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 108B	2		E9-B SHLD A108					.25 .25	NO NO			
A 108W			P1-K3 P2-R8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 32 OF 75

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 109B	2		E9-B SHLD A109					.25 .25	NO NO			
A 109W			P1-K4 P2-S1					.15 .19	NO NO		7, 18 4	
A 110	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 110B	2		E9-B SHLD A110					.25 .25	NO NO			
A 110W			P1-K5 P2-S2					.15 .19	NO NO		7, 18 4	
A 111	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 111B	2		E9-B SHLD A111					.25 .25	NO NO			
A 111W			P1-K6 P2-S3					.15 .19	NO NO		7, 18 4	
A 112	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 112B	2		E9-B SHLD A112					.25 .25	NO NO			
A 112W			P1-K7 P2-S4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 33 OF 75

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 113	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 113B	2		E10-B SHLD A113					.25 .25	NO NO			
A 113W			P1-K8 P2-S5					.15 .19	NO NO		7, 18 4	
A 114	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 114B	2		E10-B SHLD A114					.25 .25	NO NO			
A 114W			P1-K9 P2-S6					.15 .19	NO NO		7, 18 4	
A 115	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 115B	2		E10-B SHLD A115					.25 .25	NO NO			
A 115W			P1-K10 P2-S7					.15 .19	NO NO		7, 18 4	
A 116	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 116B	2		E10-B SHLD A116					.25 .25	NO NO			
A 116W			P1-K11 P2-S8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 34 OF 75

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 117	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 117B	2		E10-B SHLD A117					.25 .25	NO NO			
A 117W			P1-K12 P2-T1					.15 .19	NO NO		7, 18 4	
A 118	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 118B	2		E10-B SHLD A118					.25 .25	NO NO			
A 118W			P1-K13 P2-T2					.15 .19	NO NO		7, 18 4	
A 119	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 119B	2		E10-B SHLD A119					.25 .25	NO NO			
A 119W			P1-K14 P2-T3					.15 .19	NO NO		7, 18 4	
A 120	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 120B	2		E10-B SHLD A120					.25 .25	NO NO			
A 120W			P1-K15 P2-T4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 35 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 126B	2		E10-B SHLD A126					.25 .25	NO NO			
A 126W			P1-A21 P2-U2					.15 .19	NO NO		7, 18 4	
A 127	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 127B	2		E10-B SHLD A127					.25 .25	NO NO			
A 127W			P1-A22 P2-U3					.15 .19	NO NO		7, 18 4	
A 128	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 128B	2		E10-B SHLD A128					.25 .25	NO NO			
A 128W			P1-A23 P2-U4					.15 .19	NO NO		7, 18 4	
A 129	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 129B	2		E10-B SHLD A129					.25 .25	NO NO			
A 129W			P1-A24 P2-U5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 36 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 130	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 130B	2		E11-B SHLD A130					.25 .25	NO NO			
A 130W			P1-A25 P2-U6					.15 .19	NO NO		7, 18 4	
A 131	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 131B	2		E11-B SHLD A131					.25 .25	NO NO			
A 131W			P1-B16 P2-U7					.15 .19	NO NO		7, 18 4	
A 132	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 132B	2		E11-B SHLD A132					.25 .25	NO NO			
A 132W			P1-B17 P2-U8					.15 .19	NO NO		7, 18 4	
A 133	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 133B	2		E11-B SHLD A133					.25 .25	NO NO			
A 133W			P1-B18 P2-V1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 37 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 134	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 134B	2		E11-B SHLD A134					.25 .25	NO NO			
A 134W			P1-B19 P2-V2					.15 .19	NO NO		7, 18 4	
A 135	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 135B	2		E11-B SHLD A135					.25 .25	NO NO			
A 135W			P1-B20 P2-V3					.15 .19	NO NO		7, 18 4	
A 136	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 136B	2		E11-B SHLD A136					.25 .25	NO NO			
A 136W			P1-B21 P2-V4					.15 .19	NO NO		7, 18 4	
A 137	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 137B	2		E11-B SHLD A137					.25 .25	NO NO			
A 137W			P1-B22 P2-V5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 38 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 138	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 138B	2		E11-B SHLD A138					.25 .25	NO NO			
A 138W			P1-B23 P2-V6					.15 .19	NO NO		7, 18 4	
A 139	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 139B	2		E11-B SHLD A139					.25 .25	NO NO			
A 139W			P1-B24 P2-V7					.15 .19	NO NO		7, 18 4	
A 140	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 140B	2		E11-B SHLD A140					.25 .25	NO NO			
A 140W			P1-B25 P2-V8					.15 .19	NO NO		7, 18 4	
A 141	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 141B	2		E11-B SHLD A141					.25 .25	NO NO			
A 141W			P1-C16 P2-W1					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 39 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 142	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 142B	2		E12-B SHLD A142					.25 .25	NO NO			
A 142W			P1-C17 P2-W2					.15 .19	NO NO		7, 18 4	
A 143	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 143B	2		E12-B SHLD A143					.25 .25	NO NO			
A 143W			P1-C18 P2-W3					.15 .19	NO NO		7, 18 4	
A 144	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 144B	2		E12-B SHLD A144					.25 .25	NO NO			
A 144W			P1-C19 P2-W4					.15 .19	NO NO		7, 18 4	
A 145	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 145B	2		E12-B SHLD A145					.25 .25	NO NO			
A 145W			P1-C20 P2-W5					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 40 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 146	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 146B	2		E12-B SHLD A146					.25 .25	NO NO			
A 146W			P1-C21 P2-W6					.15 .19	NO NO		7, 18 4	
A 147	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 147B	2		E12-B SHLD A147					.25 .25	NO NO			
A 147W			P1-C22 P2-W7					.15 .19	NO NO		7, 18 4	
A 148	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 148B	2		E12-B SHLD A148					.25 .25	NO NO			
A 148W			P1-C23 P2-W8					.15 .19	NO NO		7, 18 4	
A 149	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 149B	2		E12-B SHLD A149					.25 .25	NO NO			
A 149W			P1-C24 P2-X3					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 41 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 150	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 150B	2		E12-B SHLD A150					.25 .25	NO NO			
A 150W			P1-C25 P2-X4					.15 .19	NO NO		7, 18 4	
A 151	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 151B	2		E12-B SHLD A151					.25 .25	NO NO			
A 151W			P1-D16 P2-X5					.15 .19	NO NO		7, 18 4	
A 152	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 152B	2		E12-B SHLD A152					.25 .25	NO NO			
A 152W			P1-D17 P3-X5					.15 .19	NO NO		7, 18 4	
A 153	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 153B	2		E13-B SHLD A153					.25 .25	NO NO			
A 153W			P1-D18 P3-A3					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 42 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 154B	2		E13-B SHLD A154					.25 .25	NO NO			
A 154W			P1-D19 P3-A4					.15 .19	NO NO		7, 18 4	
A 155	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 155B	2		E13-B SHLD A155					.25 .25	NO NO			
A 155W			P1-D20 P3-A5					.15 .19	NO NO		7, 18 4	
A 156	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 156B	2		E13-B SHLD A156					.25 .25				
A 156W			P1-D21 P3-A6					.15 .19			7, 18 4	
A 157	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 157B	2		E13-B SHLD A157					.25 .25				
A 157W			P1-D22 P3-B1					.15 .19			7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 43 OF 75

MIL 2084 9-65

CABLE W557 69000 0 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 158	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 158B	2		E13-B SHLD A158					.25 .25				
A 158W			P1-D23 P3-B2					.15 .19			7, 18 4	
A 159	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 159B	2		E13-B SHLD A159					.25 .25				
A 159W			P1-D24 P3-B3					.15 .19			7, 18 4	
A 160	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 160B	2		E13-B SHLD A160					.25 .25				
A 160W			P1-D25 P3-B4					.15 .19			7, 18 4	
A 161	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 161B	2		E13-B SHLD A161					.25 .25				
A 161W			P1-F16 P3-B5					.15 .19			7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 44 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 162	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 162B	2		E13-B SHLD A162					.25 .25				
A 162W			P1-F17 P3-B6					.15 .19			7, 18 4	
A 163	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 163B	2		E13-B SHLD A163					.25 .25				
A 163W			P1-F18 P3-B7					.15 .19			7, 18 4	
A 164	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 164B	2		E13-B SHLD A164					.25 .25	NO NO			
A 164W			P1-F19 P3-B8					.15 .19	NO NO		7, 18 4	
A 165	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 165B	2		E13-B SHLD A165					.25 .25	NO NO			
A 165W			P1-F20 P3-C1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 45 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 166	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 166B	2		E14-B SHLD A166					.25 .25	NO NO			
A 166W			P1-F21 P3-C2					.15 .19	NO NO		7, 18 4	
A 167	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 167B	2		E14-B SHLD A167					.25 .25	NO NO			
A 167W			P1-F22 P3-C3					.15 .19	NO NO		7, 18 4	
A 168	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 168B	2		E14-B SHLD A168					.25 .25	NO NO			
A 168W			P1-F23 P3-C4					.15 .19	NO NO		7, 18 4	
A 169	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 169B	2		E14-B SHLD A169					.25 .25	NO NO			
A 169W			P1-F24 P3-C5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 46 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 170	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 170B	2		E14-B SHLD A170					.25 .25	NO NO			
A 170W			P1-F25 P3-C6					.15 .19	NO NO		7, 18 4	
A 171	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 171B	2		E14-B SHLD A171					.25 .25	NO NO			
A 171W			P1-G16 P3-C7					.15 .19	NO NO		7, 18 4	
A 172	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 172B	2		E14-B SHLD A172					.25 .25	NO NO			
A 172W			P1-G17 P3-C8					.15 .19	NO NO		7, 18 4	
A 173	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 173B	2		E14-B SHLD A173					.25 .25	NO NO			
A 173W			P1-G18 P3-D1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E		SHEET 47 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 174	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 174B	2		E14-B SHLD A174					.25 .25	NO NO			
A 174W			P1-G19 P3-D2					.15 .19	NO NO		7, 18 4	
A 175	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 175B	2		E14-B SHLD A175					.25 .25	NO NO			
A 175W			P1-G20 P3-D3					.15 .19	NO NO		7, 18 4	
A 176	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 176B	2		E14-B SHLD A176					.25 .25	NO NO			
A 176W			P1-G21 P3-D4					.15 .19	NO NO		7, 18 4	
A 177	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 177B	2		E14-B SHLD A177					.25 .25	NO NO			
A 177W			P1-G22 P3-D5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E		SHEET 48 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 178	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 178B	2		E15-B SHLD A178					.25 .25	NO NO			
A 178W			P1-G23 P3-D6					.15 .19	NO NO		7, 18 4	
A 179	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 179B	2		E15-B SHLD A179					.25 .25	NO NO			
A 179W			P1-G24 P3-D7					.15 .19	NO NO		7, 18 4	
A 180	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 180B	2		E15-B SHLD A180					.25 .25	NO NO			
A 180W			P1-G25 P3-D8					.15 .19	NO NO		7, 18 4	
A 181	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 181B	2		E15-B SHLD A181					.25 .25	NO NO			
A 181W			P1-H16 P3-F1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E		SHEET 49 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 182	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 182B	2		E15-B SHLD A182					.25 .25	NO NO			
A 182W			P1-H17 P3-F2					.15 .19	NO NO		7, 18 4	
A 183	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 183B	2		E15-B SHLD A183					.25 .25	NO NO			
A 183W			P1-H18 P3-F3					.15 .19	NO NO		7, 18 4	
A 184	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 184B	2		E15-B SHLD A185					.25 .25	NO NO			
A 184W			P1-H19 P3-F4					.15 .19	NO NO		7, 18 4	
A 185	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 185B	2		E15-B SHLD A185					.25 .25	NO NO			
A 185W			P1-H20 P3-F5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E		SHEET 50 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 186	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 186B	2		E15-B SHLD A186					.25 .25	NO NO			
A 186W			P1-H21 P3-F6					.15 .19	NO NO		7, 18 4	
A 187	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 187B	2		E15-B SHLD A186					.25 .25	NO NO			
A 187W			P1-H22 P3-F7					.15 .19	NO NO		7, 18 4	
A 188	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 188B	2		E15-B SHLD A188					.25 .25	NO NO			
A 188W			P1-H23 P3-F8					.15 .19	NO NO		7, 18 4	
A 189	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 189B	2		E15-B SHLD A189					.25 .25	NO NO			
A 189W			P1-H24 P3-G1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E	SHEET 51 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 190	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 190B	2		E16-B SHLD A190					.25 .25	NO NO			
A 190W			P1-H25 P3-G2					.15 .19	NO NO		7, 18 4	
A 196	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 196B	2		E16-B SHLD A196					.25 .25	NO NO			
A 196W			P1-K21 P3-G8					.15 .19	NO NO		7, 18 4	
A 197	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 197B	2		E16-B SHLD A197					.25 .25	NO NO			
A 197W			P1-K22 P3-H1					.15 .19	NO NO		7, 18 4	
A 198	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 198B	2		E16-B SHLD A198					.25 .25	NO NO			
A 198W			P1-K23 P3-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E	SHEET 52 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 199B	2		E16-B SHLD A199					.25 .25	NO NO			
A 199W			P1-K24 P3-H3					.15 .19	NO NO		7, 18 4	
A 200	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 200B	2		E16-B SHLD A200					.25 .25	NO NO			
A 200W			P1-K25 P3-H4					.15 .19	NO NO		7, 18 4	
A 201	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 201B	2		E16-B SHLD A201					.25 .25	NO NO			
A 201W			P1-A26 P3-H5					.15 .19	NO NO		7, 18 4	
A 202	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 202B	2		E16-B SHLD A202					.25 .25	NO NO			
A 202W			P1-A27 P3-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E	SHEET 53 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 203	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 203B	2		E16-B SHLD A203					.25 .25	NO NO			
A 203W			P1-A28 P3-H7					.15 .19	NO NO		7, 18 4	
A 204	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 204B	2		E16-B SHLD A204					.25 .25	NO NO			
A 204W			P1-A29 P3-H8					.15 .19	NO NO		7, 18 4	
A 205	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 205B	2		E16-B SHLD A205					.25 .25	NO NO			
A 205W			P1-A30 P3-J1					.15 .19	NO NO		7, 18 4	
A 206	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 206B	2		E16-B SHLD A206					.25 .25	NO NO			
A 206W			P1-A31 P3-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR ~~D~~E	SHEET 54 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 207	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 207B	2		E17-8 SHLD A207					.25 .25	NO NO			
A 207W			P1-A32 P3-J3					.15 .19	NO NO		7, 18 4	
A 208	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 208B	2		E17-8 SHLD A208					.25 .25	NO NO			
A 208W			P1-A33 P3-J4					.15 .19	NO NO		7, 18 4	
A 211	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 211B	2		E17-8 SHLD A211					.25 .25	NO NO			
A 211W			P1-B26 P3-J7					.15 .19	NO NO		7, 18 4	
A 212	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 212B	2		E17-8 SHLD A212					.25 .25	NO NO			
A 212W			P1-B27 P3-J8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 55 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 213	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 213B	2		E17-8 SHLD A213					.25 .25	NO NO			
A 213W			P1-B28 P3-K1					.15 .19	NO NO		7, 18 4	
A 214	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 214B	2		E17-8 SHLD A214					.25 .25	NO NO			
A 214W			P1-B29 P3-K2					.15 .19	NO NO		7, 18 4	
A 215	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 215B	2		E17-8 SHLD A215					.25 .25	NO NO			
A 215W			P1-B30 P3-K3					.15 .19	NO NO		7, 18 4	
A 216	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 216B	2		E17-8 SHLD A216					.25 .25	NO NO			
A 216W			P1-B31 P3-K6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 56 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 217	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 217B	2		E17-8 SHLD A217					.25 .25	NO NO			
A 217W			P1-B32 P3-K7					.15 .19	NO NO		7, 18 4	
A 218	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 218B	2		E17-8 SHLD A218					.25 .25	NO NO			
A 218W			P1-B33 P3-K8					.15 .19	NO NO		7, 18 4	
A 219	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 219B	2		E17-8 SHLD A219					.25 .25	NO NO			
A 219W			P1-B34 P3-L1					.15 .19	NO NO		7, 18 4	
A 220	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 220B	2		E17-8 SHLD A220					.25 .25				
A 220W			P1-B35 P3-L2					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 57 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 221	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 221B	2		E18-8 SHLD A221					.25 .25				
A 221W			P1-C26 P3-L7					.15 .19			7, 18 4	
A 222	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 222B	2		E18-8 SHLD A222					.25 .25				
A 222W			P1-C27 P3-L8					.15 .19			7, 18 4	
A 223	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 223B	2		E18-8 SHLD A223					.25 .25				
A 223W			P1-C28 P3-M1					.15 .19			7, 18 4	
A 224	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 224B	2		E18-8 SHLD A224					.25 .25				
A 224W			P1-C29 P3-M2					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~D~~E	SHEET 58 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG.	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 225	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 225B	2		E18-B SHLD A224					.25 .25				
A 225W			P1-C30 P3-M3					.15 .19			7, 18 4	
A 226	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 226B	2		E18-B SHLD A226					.25 .25				
A 226W			P1-C31 P3-M6					.15 .19			7, 18 4	
A 227	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 227B	2		E18-B SHLD A227					.25 .25				
A 227W			P1-C32 P3-M7					.15 .19			7, 18 4	
A 228	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 228B	2		E18-B SHLD A228					.25 .25	NO NO			
A 228W			P1-C33 P3-M8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR ~~B~~E | SHEET 59 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 229	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 229B	2		E18-B SHLD A229					.25 .25	NO NO			
A 229W			P1-C34 P3-N1					.15 .19	NO NO		7, 18 4	
A 230	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 230B	2		E18-B SHLD A230					.25 .25	NO NO			
A 230W			P1-C35 P3-N2					.15 .19	NO NO		7, 18 4	
A 231	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 231B	2		E18-B SHLD A231					.25 .25	NO NO			
A 231W			P1-D26 P3-N3					.15 .19	NO NO		7, 18 4	
A 232	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 232B	2		E18-B SHLD A232					.25 .25	NO NO			
A 232W			P1-D27 P3-N4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR ~~B~~E | SHEET 60 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 233	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 233B	2		E19-B SHLD A233					.25 .25	NO NO			
A 233W			P1-D28 P3-N5					.15 .19	NO NO		7, 18 4	
A 234	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 234B	2		E19-B SHLD A234					.25 .25	NO NO			
A 234W			P1-D29 P3-N6					.15 .19	NO NO		7, 18 4	
A 235	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 235B	2		E19-B SHLD A235					.25 .25	NO NO			
A 235W			P1-D30 P3-N7					.15 .19	NO NO		7, 18 4	
A 236	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 236B	2		E19-B SHLD A236					.25 .25	NO NO			
A 236W			P1-D31 P3-N8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR ~~B~~E | SHEET 61 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 237	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 237B	2		E19-B SHLD A237					.25 .25	NO NO			
A 237W			P1-D32 P3-P1					.15 .19	NO NO		7, 18 4	
A 238	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 238B	2		E19-B SHLD A238					.25 .25	NO NO			
A 238W			P1-D33 P3-P2					.15 .19	NO NO		7, 18 4	
A 239	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 239B	2		E19-B SHLD A239					.25 .25	NO NO			
A 239W			P1-D34 P3-P3					.15 .19	NO NO		7, 18 4	
A 240	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 240B	2		E19-B SHLD A240					.25 .25	NO NO			
A 240W			P1-D35 P3-P4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR ~~B~~E | SHEET 62 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 241	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 241B	2		E19-B SHLD A241					.25 .25	NO NO			
A 241W			P1-F26 P3-P5					.15 .19	NO NO		7, 18 4	
A 242	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 242B	2		E19-B SHLD A242					.25 .25	NO NO			
A 242W			P1-F27 P3-P6					.15 .19	NO NO		7, 18 4	
A 243	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 243B	2		E19-B SHLD A243					.25 .25	NO NO			
A 243W			P1-F28 P3-P7					.15 .19	NO NO		7, 18 4	
A 244	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 244B	2		E19-B SHLD A244					.25 .25	NO NO			
A 244W			P1-F29 P3-P8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 63 OF 75

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 245	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 245B	2		E20-B SHLD A245					.25 .25	NO NO			
A 245W			P1-F30 P3-R1					.15 .19	NO NO		7, 18 4	
A 246	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 246B	2		E20-B SHLD A246					.25 .25	NO NO			
A 246W			P1-F31 P3-R2					.15 .19	NO NO		7, 18 4	
A 247	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 247B	2		E20-B SHLD A247					.25 .25	NO NO			
A 247W			P1-F32 P3-R3					.15 .19	NO NO		7, 18 4	
A 248	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 248B	2		E20-B SHLD A248					.25 .25	NO NO			
A 248W			P1-F33 P3-R4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 64 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 249	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 249B	2		E20-B SHLD A249					.25 .25	NO NO			
A 249W			P1-F34 P3-R5					.15 .19	NO NO		7, 18 4	
A 250	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 250B	2		E20-B SHLD A250					.25 .25	NO NO			
A 250W			P1-F35 P3-R6					.15 .19	NO NO		7, 18 4	
A 251	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 251B	2		E20-B SHLD A251					.25 .25	NO NO			
A 251W			P1-G26 P3-R7					.15 .19	NO NO		7, 18 4	
A 252	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 252B	2		E20-B SHLD A252					.25 .25	NO NO			
A 252W			P1-G27 P3-R8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 65 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 253	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 253B	2		E20-B SHLD A253					.25 .25	NO NO			
A 253W			P1-G28 P3-S1					.15 .19	NO NO		7, 18 4	
A 254	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 254B	2		E20-B SHLD A254					.25 .25	NO NO			
A 254W			P1-G29 P3-S2					.15 .19	NO NO		7, 18 4	
A 255	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 255B	2		E20-B SHLD A255					.25 .25	NO NO			
A 255W			P1-G30 P3-S3					.15 .19	NO NO		7, 18 4	
A 256	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 256B	2		E20-B SHLD A256					.25 .25	NO NO			
A 256W			P1-G31 P3-S4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 66 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 257	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 257B	2		E21-B SHLD A257					.25 .25	NO NO			
A 257W			P1-G32 P3-S5					.15 .19	NO NO		7, 18 4	
A 258	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 258B	2		E21-B SHLD A258					.25 .25	NO NO			
A 258W			P1-G33 P3-S6					.15 .19	NO NO		7, 18 4	
A 259	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 259B	2		E21-B SHLD A259					.25 .25	NO NO			
A 259W			P1-G34 P3-S7					.15 .19	NO NO		7, 18 4	
A 260	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 260B	2		E21-B SHLD A260					.25 .25	NO NO			
A 260W			P1-G35 P3-S8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 67 OF 75

MIL 2084 9-65

CABL W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 261	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 261B	2		E21-B SHLD A261					.25 .25	NO NO			
A 261W			P1-H26 P3-T1					.15 .19	NO NO		7, 18 4	
A 262	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 262B	2		E21-B SHLD A262					.25 .25	NO NO			
A 262W			P1-H27 P3-T2					.15 .19	NO NO		7, 18 4	
A 263	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 263B	2		E21-B SHLD A263					.25 .25	NO NO			
A 263W			P1-H28 P3-T3					.15 .19	NO NO		7, 18 4	
A 264	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 264B	2		E21-B SHLD A264					.25 .25	NO NO			
A 264W			P1-H29 P3-T4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 68 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 265	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 265B	2		E21-B SHLD A265					.25 .25	NO NO			
A 265W			P1-H30 P3-T5					.15 .19	NO NO		7, 18 4	
A 266	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 266B	2		E21-B SHLD A266					.25 .25	NO NO			
A 266W			P1-H31 P3-T6					.15 .19	NO NO		7, 18 4	
A 267	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 267B	2		E21-B SHLD A267					.25 .25	NO NO			
A 267W			P1-H32 P3-T7					.15 .19	NO NO		7, 18 4	
A 268	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 268B	2		E21-B SHLD A268					.25 .25	NO NO			
A 268W			P1-H33 P3-T8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 69 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 269	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 269B	2		E22-B SHLD A269					.25 .25	NO NO			
A 269W			P1-H34 P3-U1					.15 .19	NO NO		7, 18 4	
A 270	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 270B	2		E22-B SHLD A270					.25 .25	NO NO			
A 270W			P1-H35 P3-U2					.15 .19	NO NO		7, 18 4	
A 271	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 271B	2		E22-B SHLD A271					.25 .25	NO NO			
A 271W			P1-K26 P3-U3					.15 .19	NO NO		7, 18 4	
A 272	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 272B	2		E22-B SHLD A272					.25 .25	NO NO			
A 272W			P1-K27 P3-U4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 70 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 273	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 273B	2		E22-B SHLD A273					.25 .25	NO NO			
A 273W			P1-K28 P3-U5					.15 .19	NO NO		7, 18 4	
A 274	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 274B	2		E22-B SHLD A274					.25 .25	NO NO			
A 274W			P1-K29 P3-U6					.15 .19	NO NO		7, 18 4	
A 275	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 275B	2		E22-B SHLD A275					.25 .25	NO NO			
A 275W			P1-K30 P3-U7					.15 .19	NO NO		7, 18 4	
A 276	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 276B	2		E22-B SHLD A276					.25 .25	NO NO			
A 276W			P1-K31 P3-U8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 71 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 277	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 277B	2		E22-B SHLD A277					.25 .25	NO NO			
A 277W			P1-K32 P3-V1					.15 .19	NO NO		7, 18 4	
A 278	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 278B	2		E22-B SHLD A278					.25 .25	NO NO			
A 278W			P1-K33 P3-V2					.15 .19	NO NO		7, 18 4	
A 279	6		E1-BB E23-B					.25 .25	NO NO			
A 280	6		E2-BB E23-B					.25 .25	NO NO			
A 281	6		E3-BB E23-B					.25 .25	NO NO			
A 282	6		E4-BB E23-B					.25 .25	NO NO			
A 283	6		E5-BB E23-B					.25 .25	NO NO			
A 284	6		E6-BB E23-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 72 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 285	6		E7-BB E23-B					.25 .25	NO NO			
A 286	6		E8-BB E23-B					.25 .25	NO NO			
A 287	6		E9-BB E23-B					.25 .25	NO NO			
A 288	6		E10-BB E23-B					.25 .25	NO NO			
A 289	6		E11-BB E23-B					.25 .25	NO NO			
A 290	6		E12-BB E23-B					.25 .25	NO NO			
A 291	6		E13-BB E24-B					.25 .25	NO NO			
A 292	6		E14-BB E24-B					.25 .25	NO NO			
A 293	6		E15-BB E24-B					.25 .25	NO NO			
A 294	6		E16-BB E24-B					.25 .25	NO NO			
A 295	6		E17-BB E24-B					.25 .25	NO NO			
A 296	6		E18-BB E24-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 73 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

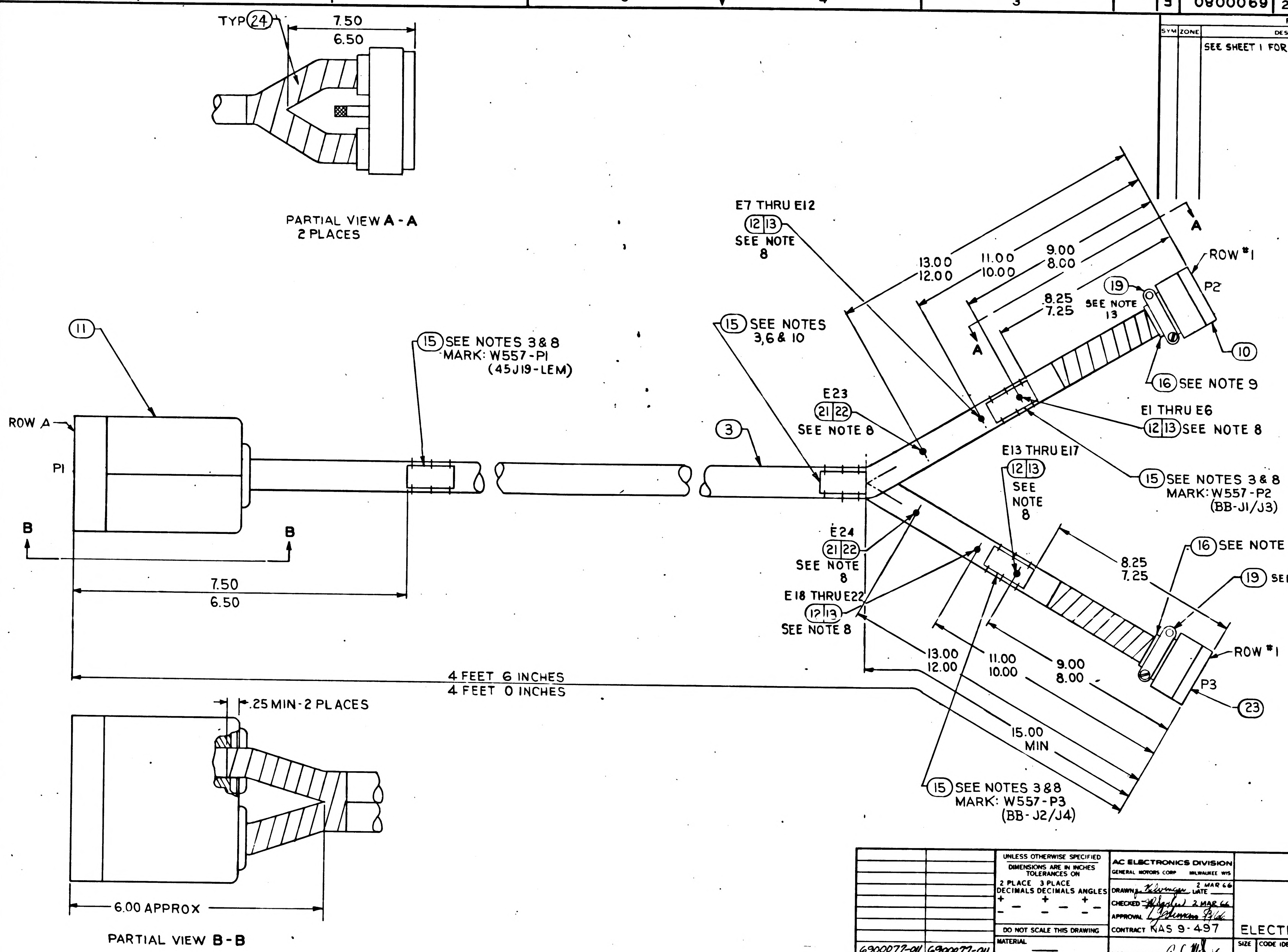
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 297	6		E19-BB E24-B					.25 .25	NO NO			
A 298	6		E20-BB E24-B					.25 .25	NO NO			
A 299	6		E21-BB E24-B					.25 .25	NO NO			
A 300	6		E22-BB E24-B					.25 .25	NO NO			
A 301	5		E23-BB P2-X6					.19 .19	NO NO		25	
A 302	5		E24-BB P3-X6					.19 .19	NO NO		25	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 74 OF 75

MIL 2084 9-65

3	0800069	2

REVISIONS Jeta 28601					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
		SEE SHEET 1 FOR REV. RECORD			


TYP 24
7.50
6.50
PARTIAL VIEW A-A
2 PLACES
E7 THRU E12
12 13
SEE NOTE 8
13.00
12.00
11.00
10.00
9.00
8.00
8.25
7.25
19
SEE NOTE 13
ROW #1
P2
A
A
10
16 SEE NOTE 9
E1 THRU E6
12 13 SEE NOTE 8
15 SEE NOTES 3,6 & 10
11
15 SEE NOTES 3 & 8
MARK: W557-P1
(45J19-LEM)
ROW A
P1
B
B
E23
21 22
SEE NOTE 8
3
E13 THRU E17
12 13
SEE NOTE 8
15 SEE NOTES 3 & 8
MARK: W557-P2
(BB-J1/J3)
E24
21 22
SEE NOTE 8
E18 THRU E22
12 13
SEE NOTE 8
7.50
6.50
16 SEE NOTE 9
8.25
7.25
19 SEE NOTE 13
ROW #1
P3
23
13.00
12.00
11.00
10.00
9.00
8.00
15.00
MIN
4 FEET 6 INCHES
4 FEET 0 INCHES
.25 MIN-2 PLACES
6.00 APPROX
PARTIAL VIEW B-B
15 SEE NOTES 3 & 8
MARK: W557-P3
(BB-J2/J4)

6900077-011 NEXT ASSY	6900077-011 USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	AC ELECTRONICS DIVISION GENERAL MOTORS CORP MILWAUKEE WIS DRAWN Kilvinger DATE 2 MAR 66 CHECKED 2 MAR 66 APPROVAL CONTRACT NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON TEXAS CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED, W557
APPLICATION		MATERIAL — APPROVAL	NASA APPROVAL MIT APPROVAL 5-10-66	SIZE D CODE IDENT NO. 99974 6900080 SCALE NONE SHEET 75 OF 75

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV. A WITH CHG. PER MXC 209931	16MAR 66	DKD
C	REVISED PER MXC 210437	31 MAR 66	R.W.T.
D	REVISED PER MXC 211614	22 APR 66	RWH
Ⓜ E	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	J.H.P. E F
F	REVISED PER TDRR 30476	11AUG66	R N RLW

REV		E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	F	E	E	E	E	E
SHEET		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
REV STATUS OF SHEETS	REV				F	F	F	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	SHEET				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN 2 MAR 66 (DAY MO YR)
CHECKER 3 MAR 66
ENGINEER 3 MAR 66
APPROVAL 5/3/66
CONTR NO. NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED W557

SIZE	CODE IDENT. NO	
A	99974	6900080
SCALE NONE		SHEET 1 OF 75

MIL 1377A6 12-65

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
48	E																
49	E																
50	E																
51	E																
52	E																
53	E																
54	E																
55	E																
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70	E																
71	E																
72	E																
73	E																
74	E																
75	F																

SIZE	CODE IDENT. NO.	
A	99974	6900080
SCALE NONE	REV LTR F	SHEET 2 OF 75

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER - A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 17.
4	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
5	APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
6	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
7	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER - A - FROM END SHIELD B - TO END SHIELD W - WHITE
8	MARK REFERENCE DESIGNATIONS SHOWN PER ND1002019, HOT IMPRESSION STAMPING, USING .12 BLACK CHARACTERS CENTRALIZED.
9	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 16 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP. USE ONLY IF REQUIRED.
10	SERIALIZE PER ND1002023.
11	LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES
12	ASSEMBLE PER ND1002032

SIZE	CODE IDENT NO.	
A	99974	6900080

SCALE-NONE | REV LTR F | SHEET 3 OF 75

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
13	AT ASSEMBLY OF ITEM 19 REMOVE 4 SELF-LOCKING NUTS SECURING LOCATING PINS TO CONNECTOR AND DISCARD. ATTACH ITEM 19 USING LOCATING PINS.
14	SPOT TIE GROUPS OF LEADS ADJACENT TO INTERNAL CLAMP (CONNECTOR SIDE). USE ITEM 24 TO SHAPE WIRE BUNDLE IN CLAMP. USE ITEM 16 TO SECURE WIRE BUNDLE IN CLAMP, IF REQUIRED.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900080

SCALE-NONE | REV LTR F | SHEET 4 OF 75

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900080-001	WIRE ND1002161 TYPE 1 CLASS 4 22 AWG WHT JKT WHT 1048 FT TOTAL LENGTH
	2	1	6900080-002	WIRE ND1002181 TYPE 1 CLASS 1 24 AWG WHT 131 FT TOTAL LENGTH
	3	1	6900080-006	ZIPPER TUBING PER ND1002155 TYPE 4 GREY 2.0, 2.0 DIA 4 FT TOTAL LENGTH 2 CHANNEL
4	4	262	1016369-421	CONTACT, SOCKET
	5	1	6900080-005	WIRE ND1002181 TYPE 1 CLASS 1 16 AWG WHT 2 FT TOTAL LENGTH
	6	1	6900080-004	WIRE ND1002181 TYPE 1 CLASS 1 20 AWG WHT 8 FT TOTAL LENGTH
4	7	262	1897300-002	CONTACT, SPRING SOCKET
4	8	262	1010763-002	SOLDER SLEEVE
4	9	524	1010490-232	INSULATION SLEEVING SHRINK FIT
	10	1	2901434-011	CONNECTOR
4	11	1	6900087-011	CONNECTOR
4	12	22	1016006-002	SPLICE REDUCER
4	13	22	1010490-258	INSULATION SLEEVING SHRINK FIT
	14		1015902-003	DELETED
4	15	4	1016128-021	BAND IDENTIFICATION

SIZE	CODE IDENT NO.	
A	99974	6900080

SCALE-NONE | REV LTR F | SHEET 5 OF 75

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	16	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A, CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	17	AR	MIL-T-713B TYPE P CLASS 2,BLK	LACING TAPE
4	18	262	1015864-232	INSULATION SLEEVING, ELECT.
4	19	2	1897391	CLAMP, CABLE DUAL ENTRY
	20		1010490-166	DELETED
4	21	2	1016006-004	SPLICE REDUCER
4	22	2	1010490-342	INSULATION SLEEVING SHRINK FIT
4	23	1	2901434-021 ~~1897336-002~~	CONNECTOR
	24	AR	MIL-I-15126 TYPE ACT	INSULATION TAPE ELEC PRESSURE SENSITIVE THERMO SETTING ADHESIVE, .75 + OR -.03 WIDE (ES2716 TYPE C)
	25	2	1016369-721	CONTACT, SOCKET

SIZE	CODE IDENT NO.	
A	99974	6900080

SCALE-NONE | REV LTR ~~F~~ ~~D~~ E | SHEET 6 OF 75

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 3B	2		E1-B SHLD A3					.25 .25	NO NO			
A 3W			P1-A3 P2-A5					.15 .19	NO NO		7, 18 4	
A 4	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 4B	2		E1-B SHLD A4					.25 .25	NO NO			
A 4W			P1-A4 P2-A6					.15 .19	NO NO		7, 18 4	
A 5	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 5B	2		E1-B SHLD A5					.25 .25	NO NO			
A 5W			P1-A5 P2-B1					.15 .19	NO NO		7, 18 4	
A 6	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 6B	2		E1-B SHLD A6					.25 .25	NO NO			
A 6W			P1-A6 P2-B2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 7 OF 75

MIL 2084 9-65

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 7	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 7B	2		E1-B SHLD A7					.25 .25	NO NO			
A 7W			P1-A7 P2-B3					.15 .19	NO NO		7, 18 4	
A 8	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 8B	2		E1-B SHLD A8					.25 .25	NO NO			
A 8W			P1-A8 P2-B4					.15 .19	NO NO		7, 18 4	
A 9	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 9B	2		E1-B SHLD A9					.25 .25	NO NO			
A 9W			P1-A9 P2-B5					.15 .19	NO NO		7, 18 4	
A 10	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 10B	2		E1-B SHLD A10					.25 .25	NO NO			
A 10W			P1-A10 P2-B6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 8 OF 75

MIL 2084 9-65

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 11	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 11B	2		E1-B SHLD A11					.25 .25	NO NO			
A 11W			P1-A11 P2-B7					.15 .19	NO NO		7, 18 4	
A 12	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 12B	2		E1-B SHLD A12					.25 .25	NO NO			
A 12W			P1-A12 P2-B8					.15 .19	NO NO		7, 18 4	
A 13	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 13B	2		E1-B SHLD A13					.25 .25	NO NO			
A 13W			P1-A13 P2-C1					.15 .19	NO NO		7, 18 4	
A 14	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 14B	2		E1-B SHLD A14					.25 .25	NO NO			
A 14W			P1-A14 P2-C2					.15 .19	NO NO.		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 9 OF 75

MIL 2084 9-65

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 15B	2		E2-B SHLD A15					.25 .25	NO NO			
A 15W			P1-A15 P2-C3					.15 .19	NO NO		7, 18 4	
A 16	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 16B	2		E2-B SHLD A16					.25 .25	NO NO			
A 16W			P1-B1 P2-C4					.15 .19	NO NO		7, 18 4	
A 17	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 17B	2		E2-B SHLD A17					.25 .25	NO NO			
A 17W			P1-B2 P2-C5					.15 .19	NO NO		7, 18 4	
A 18	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 18B	2		E2-B SHLD A18					.25 .25				
A 18W			P1-B3 P2-C6					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 10 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-B4 P2-C7					.15 .19	NO NO		7, 18 4	
A 20	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 20B	2		E2-B SHLD A20					.25 .25	NO NO			
A 20W			P1-B5 P2-C8					.15 .19	NO NO		7, 18 4	
A 21	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 21B	2		E2-B SHLD A21					.25 .25	NO NO			
A 21W			P1-B6 P2-D1					.15 .19	NO NO		7, 18 4	
A 22	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 22B	2		E2-B SHLD A22					.25 .25	NO NO			
A 22W			P1-B7 P2-D2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 11 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 23B	2		E2-B SHLD A23					.25 .25	NO NO			
A 23W			P1-B8 P2-D3					.15 .19	NO NO		7, 18 4	
A 24	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 24B	2		E2-B SHLD A24					.25 .25	NO NO			
A 24W			P1-B9 P2-D4					.15 .19	NO NO		7, 18 4	
A 25	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 25B	2		E2-B SHLD A25					.25 .25	NO NO			
A 25W			P1-B10 P2-D5					.15 .19	NO NO		7, 18 4	
A 26	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 26B	2		E2-B SHLD A26					.25 .25	NO NO			
A 26W			P1-B11 P2-D6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 12 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 27B	2		E3-B SHLD A27					.25 .25	NO NO			
A 27W			P1-B12 P2-D7					.15 .19	NO NO		7, 18 4	
A 28	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 28B	2		E3-B SHLD A28					.25 .25	NO NO			
A 28W			P1-B13 P2-D8					.15 .19	NO NO		7, 18 4	
A 29	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 29B	2		E3 SHLD A29					.25 .25	NO NO			
A 29W			P1-B14 P2-E1					.15 .19	NO NO		7, 18 4	
A 30	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 30B	2		E3 SHLD A30					.25 .25	NO NO			
A 30W			P1-B15 P2-E2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 13 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31	1				6.75 6.75	6.50 6.50				B,7 A,6A		
A 31B	2		E3 SHLD A31					.25 .25	NO NO			
A 31W			P1-C1 P2-E3					.15 .19	NO NO		7, 18 4	
A 32	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 32B	2		E3 SHLD A32					.25 .25	NO NO			
A 32W			P1-C2 P2-E4					.15 .19	NO NO		7, 18 4	
A 33	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 33B	2		E3-B SHLD A33					.25 .25	NO NO			
A 33W			P1-C3 P2-E5					.15 .19	NO NO		7, 18 4	
A 34	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 34B	2		E3-B SHLD A34					.25 .25	NO NO			
A 34W			P1-C4 P2-E6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 14 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 35	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 35B	2		E3-B SHLD A35					.25 .25	NO NO			
A 35W			P1-C5 P2-E7					.15 .19	NO NO		7, 18 4	
A 36	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 36B	2		E3-B SHLD A36					.25 .25	NO NO			
A 36W			P1-C6 P2-E8					.15 .19	NO NO		7, 18 4	
A 37	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 37B	2		E3-B SHLD A37					.25 .25	NO NO			
A 37W			P1-C7 P2-F1					.15 .19	NO NO		7, 18 4	
A 38	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 38B	2		E3-B SHLD A38					.25 .25	NO NO			
A 38W			P1-C8 P2-F2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 15 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 39	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 39B	2		E4-B SHLD A39					.25 .25	NO NO			
A 39W			P1-C9 P2-F3					.15 .19	NO NO		7, 18 4	
A 40	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 40B	2		E4-B SHLD A40					.25 .25	NO NO			
A 40W			P1-C10 P2-F4					.15 .19	NO NO		7, 18 4	
A 41	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 41B	2		E4-B SHLD A41					.25 .25	NO NO			
A 41W			P1-C11 P2-F5					.15 .19	NO NO		7, 18 4	
A 42	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 42B	2		E4-B SHLD A42					.25 .25	NO NO			
A 42W			P1-C12 P2-F6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 16 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 43B	2		E4-B SHLD A43					.25 .25	NO NO			
A 43W			P1-C13 P2-F7					.15 .19	NO NO		7, 18 4	
A 44	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 44B	2		E4-B SHLD A44					.25 .25	NO NO			
A 44W			P1-C14 P2-F8					.15 .19	NO NO		7, 18 4	
A 45	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 45B	2		E4-B SHLD A45					.25 .25	NO NO			
A 45W			P1-C15 P2-G1					.15 .19	NO NO		7, 18 4	
A 46	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 46B	2		E4-B SHLD A46					.25 .25	NO NO			
A 46W			P1-D1 P2-G2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 17 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 47B	2		E4-B SHLD A47					.25 .25	NO NO			
A 47W			P1-D2 P2-G3					.15 .19	NO NO		7, 18 4	
A 48	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 48B	2		E4-B SHLD A48					.25 .25	NO NO			
A 48W			P1-D3 P2-G4					.15 .19	NO NO		7, 18 4	
A 49	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 49B	2		E4-B SHLD A49					.25 .25	NO NO			
A 49W			P1-D4 P2-G5					.15 .19	NO NO		7, 18 4	
A 50	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 50B	2		E4-B SHLD A50					.25 .25	NO NO			
A 50W			P1-D5 P2-G6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 18 OF 75

CABLE W557 6900080 E~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 51	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 51B	2		E5-8 SHLD A51					.25 .25	NO NO			
A 51W			P1-D6 P2-G7					.15 .19	NO NO		7, 18 4	
A 52	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 52B	2		E5-8 SHLD A52					.25 .25	NO NO			
A 52W			P1-D7 P2-G8					.15 .19	NO NO		7, 18 4	
A 53	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 53B	2		E5-8 SHLD A53					.25 .25	NO NO			
A 53W			P1-D8 P2-H1					.15 .19	NO NO		7, 18 4	
A 54	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 54B	2		E5-8 SHLD A54					.25 .25	NO NO			
A 54W			P1-D9 P2-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 19 OF 75

MIL 2084 9-65

CABLE W557 6900080 E~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 55	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 55B	2		E5-8 SHLD A55					.25 .25	NO NO			
A 55W			P1-D10 P2-H3					.15 .19	NO NO		7, 18 4	
A 56	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 56B	2		E5-8 SHLD A56					.25 .25	NO NO			
A 56W			P1-D11 P2-H4					.15 .19	NO NO		7, 18 4	
A 57	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 57B	2		E5-8 SHLD A57					.25 .25	NO NO			
A 57W			P1-D12 P2-H5					.15 .19	NO NO		7, 18 4	
A 58	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 58B	2		E5-8 SHLD A58					.25 .25	NO NO			
A 58W			P1-D13 P2-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 20 OF 75

MIL 2084 9-65

CABLE W557 6900080 E~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 59	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 59B	2		E5-8 SHLD A59					.25 .25	NO NO			
A 59W			P1-D14 P2-H7					.15 .19	NO NO		7, 18 4	
A 60	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 60B	2		E5-8 SHLD A60					.25 .25	NO NO			
A 60W			P1-D15 P2-H8					.15 .19	NO NO		7, 18 4	
A 61	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 61B	2		E5-8 SHLD A61					.25 .25	NO NO			
A 61W			P1-F1 P2-J1					.15 .19	NO NO		7, 18 4	
A 62	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 62B	2		E5-8 SHLD A62					.25 .25	NO NO			
A 62W			P1-F2 P2-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 21 OF 75

MIL 2084 9-65

CABLE W557 6900080 E~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 63	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 63B	2		E6-8 SHLD A63					.25 .25	NO NO			
A 63W			P1-F3 P2-J3					.15 .19	NO NO		7, 18 4	
A 64	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 64B	2		E6-8 SHLD A64					.25 .25	NO NO			
A 64W			P1-F4 P2-J4					.15 .19	NO NO		7, 18 4	
A 65	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 65B	2		E6-8 SHLD A65					.25 .25	NO NO			
A 65W			P1-F5 P2-J5					.15 .19	NO NO		7, 18 4	
A 66	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 66B	2		E6-8 SHLD A66					.25 .25	NO NO			
A 66W			P1-F6 P2-J6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 22 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 67	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 67B	2		E6-8 SHLD A67					.25 .25	NO NO			
A 67W			P1-F7 P2-J7					.15 .19	NO NO		7, 18 4	
A 68	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 68B	2		E6-8 SHLD A68					.25 .25	NO NO			
A 68W			P1-F8 P2-J8					.15 .19	NO NO		7, 18 4	
A 69	1				4.75 4.75	4.00 4.00				8,7 A,6A	9 8, 9	
A 69B	2		E6-8 SHLD A69					.25 .25	NO NO			
A 69W			P1-F9 P2-K1					.15 .19	NO NO		7, 18 4	
A 70	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 70B	2		E6-8 SHLD A70					.25 .25	NO NO			
A 70W			P1-F10 P2-K2					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 23 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 71	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 71B	2		E6-8 SHLD A71					.25 .25	NO NO			
A 71W			P1-F11 P2-K3					.15 .19	NO NO		7, 18 4	
A 72	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 72B	2		E6-8 SHLD A72					.25 .25	NO NO			
A 72W			P1-F12 P2-K6					.15 .19	NO NO		7, 18 4	
A 73	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 73B	2		E6-8 SHLD A73					.25 .25	NO NO			
A 73W			P1-F13 P2-K7					.15 .19	NO NO		7, 18 4	
A 74	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 74B	2		E6-8 SHLD A74					.25 .25	NO NO			
A 74W			P1-F14 P2-K8					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 24 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 75B	2		E7-8 SHLD A75					.25 .25	NO NO			
A 75W			P1-F15 P2-L1					.15 .19	NO NO		7, 18 4	
A 76	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 76B	2		E7-8 SHLD A76					.25 .25	NO NO			
A 76W			P1-G1 P2-L2					.15 .19	NO NO		7, 18 4	
A 77	1				7.75 6.75	7.00 6.00				8,7 A,6A	9 8, 9	
A 77B	2		E7-8 SHLD A77					.25 .25	NO NO			
A 77W			P1-G2 P2-L7					.15 .19	NO NO		7, 18 4	
A 78	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 78B	2		E7-8 SHLD A78					.25 .25	NO NO			
A 78W			P1-G3 P2-L8					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 25 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 79B	2		E7-8 SHLD A79					.25 .25	NO NO			
A 79W			P1-G4 P2-M1					.15 .19	NO NO		7, 18 4	
A 80	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 80B	2		E7-8 SHLD A80					.25 .25	NO NO			
A 80W			P1-G5 P2-M2					.15 .19	NO NO		7, 18 4	
A 81	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 81B	2		E7-8 SHLD A81					.25 .25	NO NO			
A 81W			P1-G6 P2-M3					.15 .19	NO NO		7, 18 4	
A 82	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 82B	2		E7-8 SHLD A82					.25 .25	NO NO			
A 82W			P1-G7 P2-M6					.15 .19	NO NO		7, 18 4	

SIZE A CODE IDENT NO. 99974 6900080
SCALE-NONE REV LTR E SHEET 26 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 83	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 83B	2		E7-B SHLD A83					.25 .25	NO NO			
A 83W			P1-G8 P2-M7					.15 .19	NO NO		7, 18 4	
A 84	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 84B	2		E7-B SHLD A84					.25 .25	NO NO			
A 84W			P1-G9 P2-M8					.15 .19	NO NO		7, 18 4	
A 85	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 85B	2		E7-B SHLD A85					.25 .25	NO NO			
A 85W			P1-G10 P2-N1					.15 .19	NO NO		7, 18 4	
A 86	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 86B	2		E7-B SHLD A86					.25 .25	NO NO			
A 86W			P1-G11 P2-N2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 27 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 87B	2		E8-B SHLD A87					.25 .25	NO NO			
A 87W			P1-G12 P2-N3					.15 .19	NO NO		7, 18 4	
A 88	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 88B	2		E8-B SHLD A88					.25 .25	NO NO			
A 88W			P1-G13 P2-N4					.15 .19	NO NO		7, 18 4	
A 89	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 89B	2		E8-B SHLD A89					.25 .25	NO NO			
A 89W			P1-G14 P2-N5					.15 .19	NO NO		7, 18 4	
A 90	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 90B	2		E8-B SHLD A90					.25 .25	NO NO			
A 90W			P1-G15 P2-N6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 28 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 91B	2		E8-B SHLD A91					.25 .25	NO NO			
A 91W			P1-H1 P2-N7					.15 .19	NO NO		7, 18 4	
A 92	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 92B	2		E8-B SHLD A92					.25 .25	NO NO			
A 92W			P1-H2 P2-N8					.15 .19	NO NO		7, 18 4	
A 93	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 93B	2		E8-B SHLD A93					.25 .25	NO NO			
A 93W			P1-H3 P2-P1					.15 .19	NO NO		7, 18 4	
A 94	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 94B	2		E8-B SHLD A94					.25 .25	NO NO			
A 94W			P1-H4 P2-P2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 29 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 95B	2		E8-B SHLD A95					.25 .25	NO NO			
A 95W			P1-H5 P2-P3					.15 .19	NO NO		7, 18 4	
A 96	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 96B	2		E8-B SHLD A96					.25 .25	NO NO			
A 96W			P1-H6 P2-P4					.15 .19	NO NO		7, 18 4	
A 97	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 97B	2		E8-B SHLD A97					.25 .25	NO NO			
A 97W			P1-H7 P2-P5					.15 .19	NO NO		7, 18 4	
A 98	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 98B	2		E8-B SHLD A98					.25 .25	NO NO			
A 98W			P1-H8 P2-P6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 30 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 99	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 99B	2		E9-B SHLD A99					.25 .25	NO NO			
A 99W			P1-H9 P2-P7					.15 .19	NO NO		7, 18 4	
A 100	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 100B	2		E9-B SHLD A100					.25 .25	NO NO			
A 100W			P1-H10 P2-P8					.15 .19	NO NO		7, 18 4	
A 101	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 101B	2		E9-B SHLD A101					.25 .25	NO NO			
A 101W			P1-H11 P2-R1					.15 .19	NO NO		7, 18 4	
A 102	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 102B	2		E9-B SHLD A102					.25 .25	NO NO			
A 102W			P1-H12 P2-R2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 31 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 103B	2		E9-B SHLD A103					.25 .25	NO NO			
A 103W			P1-H13 P2-R3					.15 .19	NO NO		7, 18 4	
A 104	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 104B	2		E9-B SHLD A104					.25 .25	NO NO			
A 104W			P1-H14 P2-R4					.15 .19	NO NO		7, 18 4	
A 105	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 105B	2		E9-B SHLD A105					.25 .25	NO NO			
A 105W			P1-H15 P2-R5					.15 .19	NO NO		7, 18 4	
A 108	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 108B	2		E9-B SHLD A108					.25 .25	NO NO			
A 108W			P1-K3 P2-R8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 32 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 109B	2		E9-B SHLD A109					.25 .25	NO NO			
A 109W			P1-K4 P2-S1					.15 .19	NO NO		7, 18 4	
A 110	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 110B	2		E9-B SHLD A110					.25 .25	NO NO			
A 110W			P1-K5 P2-S2					.15 .19	NO NO		7, 18 4	
A 111	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 111B	2		E9-B SHLD A111					.25 .25	NO NO			
A 111W			P1-K6 P2-S3					.15 .19	NO NO		7, 18 4	
A 112	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 112B	2		E9-B SHLD A112					.25 .25	NO NO			
A 112W			P1-K7 P2-S4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 33 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 113	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 113B	2		E10-B SHLD A113					.25 .25	NO NO			
A 113W			P1-K8 P2-S5					.15 .19	NO NO		7, 18 4	
A 114	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 114B	2		E10-B SHLD A114					.25 .25	NO NO			
A 114W			P1-K9 P2-S6					.15 .19	NO NO		7, 18 4	
A 115	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 115B	2		E10-B SHLD A115					.25 .25	NO NO			
A 115W			P1-K10 P2-S7					.15 .19	NO NO		7, 18 4	
A 116	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 116B	2		E10-B SHLD A116					.25 .25	NO NO			
A 116W			P1-K11 P2-S8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 34 OF 75

MIL 2084 9-65

CABLE W557 — 6900080 — ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 117	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 117B	2		E10-B SHLD A117					.25 .25	NO NO			
A 117W			P1-K12 P2-T1					.15 .19	NO NO		7, 18 4	
A 118	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 118B	2		E10-B SHLD A118					.25 .25	NO NO			
A 118W			P1-K13 P2-T2					.15 .19	NO NO		7, 18 4	
A 119	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 119B	2		E10-B SHLD A119					.25 .25	NO NO			
A 119W			P1-K14 P2-T3					.15 .19	NO NO		7, 18 4	
A 120	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 120B	2		E10-B SHLD A120					.25 .25	NO NO			
A 120W			P1-K15 P2-T4					.15 .19	NO NO		7, 18 4	

SIZE A — CODE IDENT NO. 99974 — 6900080

SCALE-NONE — REV LTR ~~B~~E — SHEET 35 OF 75

CABLE W557 — 6900080 — ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 126B	2		E10-B SHLD A126					.25 .25	NO NO			
A 126W			P1-A21 P2-U2					.15 .19	NO NO		7, 18 4	
A 127	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 127B	2		E10-B SHLD A127					.25 .25	NO NO			
A 127W			P1-A22 P2-U3					.15 .19	NO NO		7, 18 4	
A 128	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 128B	2		E10-B SHLD A128					.25 .25	NO NO			
A 128W			P1-A23 P2-U4					.15 .19	NO NO		7, 18 4	
A 129	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 129B	2		E10-B SHLD A129					.25 .25	NO NO			
A 129W			P1-A24 P2-U5					.15 .19	NO NO		7, 18 4	

SIZE A — CODE IDENT NO. 99974 — 6900080

SCALE-NONE — REV LTR ~~B~~E — SHEET 36 OF 75

CABLE W557 — 6900080 — ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 130	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 130B	2		E11-B SHLD A130					.25 .25	NO NO			
A 130W			P1-A25 P2-U6					.15 .19	NO NO		7, 18 4	
A 131	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 131B	2		E11-B SHLD A131					.25 .25	NO NO			
A 131W			P1-B16 P2-U7					.15 .19	NO NO		7, 18 4	
A 132	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 132B	2		E11-B SHLD A132					.25 .25	NO NO			
A 132W			P1-B17 P2-U8					.15 .19	NO NO		7, 18 4	
A 133	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 133B	2		E11-B SHLD A133					.25 .25	NO NO			
A 133W			P1-B18 P2-V1					.15 .19	NO NO		7, 18 4	

SIZE A — CODE IDENT NO. 99974 — 6900080

SCALE-NONE — REV LTR ~~B~~E — SHEET 37 OF 75

CABLE W557 — 6900080 — ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 134	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 134B	2		E11-B SHLD A134					.25 .25	NO NO			
A 134W			P1-B19 P2-V2					.15 .19	NO NO		7, 18 4	
A 135	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 135B	2		E11-B SHLD A135					.25 .25	NO NO			
A 135W			P1-B20 P2-V3					.15 .19	NO NO		7, 18 4	
A 136	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 136B	2		E11-B SHLD A136					.25 .25	NO NO			
A 136W			P1-B21 P2-V4					.15 .19	NO NO		7, 18 4	
A 137	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 137B	2		E11-B SHLD A137					.25 .25	NO NO			
A 137W			P1-B22 P2-V5					.15 .19	NO NO		7, 18 4	

SIZE A — CODE IDENT NO. 99974 — 6900080

SCALE-NONE — REV LTR ~~B~~E — SHEET 38 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 138	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 138B	2		E11-B SHLD A138					.25 .25	NO NO			
A 138W			P1-B23 P2-V6					.15 .19	NO NO		7, 18 4	
A 139	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 139B	2		E11-B SHLD A139					.25 .25	NO NO			
A 139W			P1-B24 P2-V7					.15 .19	NO NO		7, 18 4	
A 140	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 140B	2		E11-B SHLD A140					.25 .25	NO NO			
A 140W			P1-B25 P2-V8					.15 .19	NO NO		7, 18 4	
A 141	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 141B	2		E11-B SHLD A141					.25 .25	NO NO			
A 141W			P1-C16 P2-W1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 39 OF 75

MIL 2084 9 65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 142	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 142B	2		E12-B SHLD A142					.25 .25	NO NO			
A 142W			P1-C17 P2-W2					.15 .19	NO NO		7, 18 4	
A 143	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 143B	2		E12-B SHLD A143					.25 .25	NO NO			
A 143W			P1-C18 P2-W3					.15 .19	NO NO		7, 18 4	
A 144	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 144B	2		E12-B SHLD A144					.25 .25	NO NO			
A 144W			P1-C19 P2-W4					.15 .19	NO NO		7, 18 4	
A 145	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 145B	2		E12-B SHLD A145					.25 .25	NO NO			
A 145W			P1-C20 P2-W5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 40 OF 75

MIL 2084 9 65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 146	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 146B	2		E12-B SHLD A146					.25 .25	NO NO			
A 146W			P1-C21 P2-W6					.15 .19	NO NO		7, 18 4	
A 147	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 147B	2		E12-B SHLD A147					.25 .25	NO NO			
A 147W			P1-C22 P2-W7					.15 .19	NO NO		7, 18 4	
A 148	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 148B	2		E12-B SHLD A148					.25 .25	NO NO			
A 148W			P1-C23 P2-W8					.15 .19	NO NO		7, 18 4	
A 149	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 149B	2		E12-B SHLD A149					.25 .25	NO NO			
A 149W			P1-C24 P2-X3					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 41 OF 75

MIL 2084 9 65

CABLE W557 6900080 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 150	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 150B	2		E12-B SHLD A150					.25 .25	NO NO			
A 150W			P1-C25 P2-X4					.15 .19	NO NO		7, 18 4	
A 151	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 151B	2		E12-B SHLD A151					.25 .25	NO NO			
A 151W			P1-D16 P2-X5					.15 .19	NO NO		7, 18 4	
A 152	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 152B	2		E22-B SHLD A152					.25 .25	NO NO			
A 152W			P1-D17 P3-X5					.15 .19	NO NO		7, 18 4	
A 153	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 153B	2		E13-B SHLD A153					.25 .25	NO NO			
A 153W			P1-D18 P3-A3					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR F	SHEET 42 OF 75

MIL 2084 9 65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 154B	2		E13-8 SHLD A154					.25 .25	NO NO			
A 154W			P1-D19 P3-A4					.15 .19	NO NO		7, 18 4	
A 155	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 155B	2		E13-8 SHLD A155					.25 .25	NO NO			
A 155W			P1-D20 P3-A5					.15 .19	NO NO		7, 18 4	
A 156	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 156B	2		E13-8 SHLD A156					.25 .25				
A 156W			P1-D21 P3-A6					.15 .19			7, 18 4	
A 157	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 157B	2		E13-8 SHLD A157					.25 .25				
A 157W			P1-D22 P3-B1					.15 .19			7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 43 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 158	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 158B	2		E13-8 SHLD A158					.25 .25				
A 158W			P1-D23 P3-B2					.15 .19			7, 18 4	
A 159	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 159B	2		E13-8 SHLD A159					.25 .25				
A 159W			P1-D24 P3-B3					.15 .19			7, 18 4	
A 160	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 160B	2		E13-8 SHLD A160					.25 .25				
A 160W			P1-D25 P3-B4					.15 .19			7, 18 4	
A 161	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 161B	2		E13-8 SHLD A161					.25 .25				
A 161W			P1-F16 P3-B5					.15 .19			7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 44 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 162	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 162B	2		E13-8 SHLD A162					.25 .25				
A 162W			P1-F17 P3-B6					.15 .19			7, 18 4	
A 163	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 163B	2		E13-8 SHLD A163					.25 .25				
A 163W			P1-F18 P3-B7					.15 .19			7, 18 4	
A 164	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 164B	2		E13-8 SHLD A164					.25 .25	NO NO			
A 164W			P1-F19 P3-B8					.15 .19	NO NO		7, 18 4	
A 165	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 165B	2		E13-8 SHLD A165					.25 .25	NO NO			
A 165W			P1-F20 P3-C1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 45 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 166	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 166B	2		E14-8 SHLD A166					.25 .25	NO NO			
A 166W			P1-F21 P3-C2					.15 .19	NO NO		7, 18 4	
A 167	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 167B	2		E14-8 SHLD A167					.25 .25	NO NO			
A 167W			P1-F22 P3-C3					.15 .19	NO NO		7, 18 4	
A 168	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 168B	2		E14-8 SHLD A168					.25 .25	NO NO			
A 168W			P1-F23 P3-C4					.15 .19	NO NO		7, 18 4	
A 169	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 169B	2		E14-8 SHLD A169					.25 .25	NO NO			
A 169W			P1-F24 P3-C5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 46 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 170	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 170B	2		E14-B SHLD A170					.25 .25	NO NO			
A 170W			P1-F25 P3-C6					.15 .19	NO NO		7, 18 4	
A 171	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 171B	2		E14-B SHLD A171					.25 .25	NO NO			
A 171W			P1-G16 P3-C7					.15 .19	NO NO		7, 18 4	
A 172	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 172B	2		E14-B SHLD A172					.25 .25	NO NO			
A 172W			P1-G17 P3-C8					.15 .19	NO NO		7, 18 4	
A 173	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 173B	2		E14-B SHLD A173					.25 .25	NO NO			
A 173W			P1-G18 P3-D1					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 47 OF 75	

MIL 2084 9 65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 174	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 174B	2		E14-B SHLD A174					.25 .25	NO NO			
A 174W			P1-G19 P3-D2					.15 .19	NO NO		7, 18 4	
A 175	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 175B	2		E14-B SHLD A175					.25 .25	NO NO			
A 175W			P1-G20 P3-D3					.15 .19	NO NO		7, 18 4	
A 176	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 176B	2		E14-B SHLD A176					.25 .25	NO NO			
A 176W			P1-G21 P3-D4					.15 .19	NO NO		7, 18 4	
A 177	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 177B	2		E14-B SHLD A177					.25 .25	NO NO			
A 177W			P1-G22 P3-D5					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 48 OF 75	

MIL 2084 9 65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 178	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 178B	2		E15-B SHLD A178					.25 .25	NO NO			
A 178W			P1-G23 P3-D6					.15 .19	NO NO		7, 18 4	
A 179	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 179B	2		E15-B SHLD A179					.25 .25	NO NO			
A 179W			P1-G24 P3-D7					.15 .19	NO NO		7, 18 4	
A 180	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 180B	2		E15-B SHLD A180					.25 .25	NO NO			
A 180W			P1-G25 P3-D8					.15 .19	NO NO		7, 18 4	
A 181	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 181B	2		E15-B SHLD A181					.25 .25	NO NO			
A 181W			P1-H16 P3-F1					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 49 OF 75	

MIL 2084 9 65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 182	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 182B	2		E15-B SHLD A182					.25 .25	NO NO			
A 182W			P1-H17 P3-F2					.15 .19	NO NO		7, 18 4	
A 183	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 183B	2		E15-B SHLD A183					.25 .25	NO NO			
A 183W			P1-H18 P3-F3					.15 .19	NO NO		7, 18 4	
A 184	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 184B	2		E15-B SHLD A185					.25 .25	NO NO			
A 184W			P1-H19 P3-F4					.15 .19	NO NO		7, 18 4	
A 185	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 185B	2		E15-B SHLD A185					.25 .25	NO NO			
A 185W			P1-H20 P3-F5					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR E	SHEET 50 OF 75	

MIL 2084 9 65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 186	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 186B	2		E15-8 SHLD A186					.25 .25	NO NO			
A 186W			P1-H21 P3-F6					.15 .19	NO NO		7, 18 4	
A 187	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 187B	2		E15-8 SHLD A186					.25 .25	NO NO			
A 187W			P1-H22 P3-F7					.15 .19	NO NO		7, 18 4	
A 188	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 188B	2		E15-8 SHLD A188					.25 .25	NO NO			
A 188W			P1-H23 P3-F8					.15 .19	NO NO		7, 18 4	
A 189	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 189B	2		E15-8 SHLD A189					.25 .25	NO NO			
A 189W			P1-H24 P3-G1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 51 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 190	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 190B	2		E16-8 SHLD A190					.25 .25	NO NO			
A 190W			P1-H25 P3-G2					.15 .19	NO NO		7, 18 4	
A 196	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 196B	2		E16-8 SHLD A196					.25 .25	NO NO			
A 196W			P1-K21 P3-G8					.15 .19	NO NO		7, 18 4	
A 197	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 197B	2		E16-8 SHLD A197					.25 .25	NO NO			
A 197W			P1-K22 P3-H1					.15 .19	NO NO		7, 18 4	
A 198	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 198B	2		E16-8 SHLD A198					.25 .25	NO NO			
A 198W			P1-K23 P3-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 52 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 199B	2		E16-8 SHLD A199					.25 .25	NO NO			
A 199W			P1-K24 P3-H3					.15 .19	NO NO		7, 18 4	
A 200	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 200B	2		E16-8 SHLD A200					.25 .25	NO NO			
A 200W			P1-K25 P3-H4					.15 .19	NO NO		7, 18 4	
A 201	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 201B	2		E16-8 SHLD A201					.25 .25	NO NO			
A 201W			P1-A26 P3-H5					.15 .19	NO NO		7, 18 4	
A 202	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 202B	2		E16-8 SHLD A202					.25 .25	NO NO			
A 202W			P1-A27 P3-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 53 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 203	1				4.25 4.25	4.00 4.00				8,7 A,6A	9 8, 9	
A 203B	2		E16-8 SHLD A203					.25 .25	NO NO			
A 203W			P1-A28 P3-H7					.15 .19	NO NO		7, 18 4	
A 204	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 204B	2		E16-8 SHLD A204					.25 .25	NO NO			
A 204W			P1-A29 P3-H8					.15 .19	NO NO		7, 18 4	
A 205	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 205B	2		E16-8 SHLD A205					.25 .25	NO NO			
A 205W			P1-A30 P3-J1					.15 .19	NO NO		7, 18 4	
A 206	1				4.75 4.75	4.50 4.50				8,7 A,6A	9 8, 9	
A 206B	2		E16-8 SHLD A206					.25 .25	NO NO			
A 206W			P1-A31 P3-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 54 OF 75

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 207	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 207B	2		E17-B SHLD A207					.25 .25	NO NO			
A 207W			P1-A32 P3-J3					.15 .19	NO NO		7, 18 4	
A 208	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 208B	2		E17-B SHLD A208					.25 .25	NO NO			
A 208W			P1-A33 P3-J4					.15 .19	NO NO		7, 18 4	
A 211	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 211B	2		E17-B SHLD A211					.25 .25	NO NO			
A 211W			P1-B26 P3-J7					.15 .19	NO NO		7, 18 4	
A 212	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 212B	2		E17-B SHLD A212					.25 .25	NO NO			
A 212W			P1-B27 P3-J8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~B~~E | SHEET 55 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 213	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 213B	2		E17-B SHLD A213					.25 .25	NO NO			
A 213W			P1-B28 P3-K1					.15 .19	NO NO		7, 18 4	
A 214	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 214B	2		E17-B SHLD A214					.25 .25	NO NO			
A 214W			P1-B29 P3-K2					.15 .19	NO NO		7, 18 4	
A 215	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 215B	2		E17-B SHLD A215					.25 .25	NO NO			
A 215W			P1-B30 P3-K3					.15 .19	NO NO		7, 18 4	
A 216	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 216B	2		E17-B SHLD A216					.25 .25	NO NO			
A 216W			P1-B31 P3-K6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~B~~E | SHEET 56 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 217	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 217B	2		E17-B SHLD A217					.25 .25	NO NO			
A 217W			P1-B32 P3-K7					.15 .19	NO NO		7, 18 4	
A 218	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 218B	2		E17-B SHLD A218					.25 .25	NO NO			
A 218W			P1-B33 P3-K8					.15 .19	NO NO		7, 18 4	
A 219	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 219B	2		E17-B SHLD A219					.25 .25	NO NO			
A 219W			P1-B34 P3-L1					.15 .19	NO NO		7, 18 4	
A 220	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 220B	2		E17-B SHLD A220					.25 .25				
A 220W			P1-B35 P3-L2					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~B~~E | SHEET 57 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 221	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 221B	2		E18-B SHLD A221					.25 .25				
A 221W			P1-C26 P3-L7					.15 .19			7, 18 4	
A 222	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 222B	2		E18-B SHLD A222					.25 .25				
A 222W			P1-C27 P3-L8					.15 .19			7, 18 4	
A 223	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 223B	2		E18-B SHLD A223					.25 .25				
A 223W			P1-C28 P3-M1					.15 .19			7, 18 4	
A 224	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 224B	2		E18-B SHLD A224					.25 .25				
A 224W			P1-C29 P3-M2					.15 .19			7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~B~~E | SHEET 58 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 225	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 225B	2		E18-B SHLD A224					.25 .25				
A 225W			P1-C30 P3-M3					.15 .19			7, 18 4	
A 226	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 6, 9	
A 226B	2		E18-B SHLD A226					.25 .25				
A 226W			P1-C31 P3-M6					.15 .19			7, 18 4	
A 227	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 227B	2		E18-B SHLD A227					.25 .25				
A 227W			P1-C32 P3-M7					.15 .19			7, 18 4	
A 228	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 228B	2		E18-B SHLD A228					.25 .25	NO NO			
A 228W			P1-C33 P3-M8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~E
SHEET 59 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 229	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 229B	2		E18-B SHLD A229					.25 .25	NO NO			
A 229W			P1-C34 P3-N1					.15 .19	NO NO		7, 18 4	
A 230	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 230B	2		E18-B SHLD A230					.25 .25	NO NO			
A 230W			P1-C35 P3-N2					.15 .19	NO NO		7, 18 4	
A 231	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 231B	2		E18-B SHLD A231					.25 .25	NO NO			
A 231W			P1-D26 P3-N3					.15 .19	NO NO		7, 18 4	
A 232	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 232B	2		E18-B SHLD A232					.25 .25	NO NO			
A 232W			P1-D27 P3-N4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~E
SHEET 60 OF 75

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 233	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 233B	2		E19-B SHLD A233					.25 .25	NO NO			
A 233W			P1-D28 P3-N5					.15 .19	NO NO		7, 18 4	
A 234	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 234B	2		E19-B SHLD A234					.25 .25	NO NO			
A 234W			P1-D29 P3-N6					.15 .19	NO NO		7, 18 4	
A 235	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 235B	2		E19-B SHLD A235					.25 .25	NO NO			
A 235W			P1-D30 P3-N7					.15 .19	NO NO		7, 18 4	
A 236	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 236B	2		E19-B SHLD A236					.25 .25	NO NO			
A 236W			P1-D31 P3-N8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~E
SHEET 61 OF 75

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 237	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 237B	2		E19-B SHLD A237					.25 .25	NO NO			
A 237W			P1-D32 P3-P1					.15 .19	NO NO		7, 18 4	
A 238	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 238B	2		E19-B SHLD A238					.25 .25	NO NO			
A 238W			P1-D33 P3-P2					.15 .19	NO NO		7, 18 4	
A 239	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 239B	2		E19-B SHLD A239					.25 .25	NO NO			
A 239W			P1-D34 P3-P3					.15 .19	NO NO		7, 18 4	
A 240	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 240B	2		E19-B SHLD A240					.25 .25	NO NO			
A 240W			P1-D35 P3-P4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~E
SHEET 62 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 241	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 241B	2		E19-B SHLD A241					.25 .25	NO NO			
A 241W			P1-F26 P3-P5					.15 .19	NO NO		7, 18 4	
A 242	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 242B	2		E19-B SHLD A242					.25 .25	NO NO			
A 242W			P1-F27 P3-P6					.15 .19	NO NO		7, 18 4	
A 243	1				7.75 6.75	7.50 6.50				8,7 A,6A	9 8, 9	
A 243B	2		E19-B SHLD A243					.25 .25	NO NO			
A 243W			P1-F28 P3-P7					.15 .19	NO NO		7, 18 4	
A 244	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 244B	2		E19-B SHLD A244					.25 .25	NO NO			
A 244W			P1-F29 P3-P6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 63 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 245	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 245B	2		E20-B SHLD A245					.25 .25	NO NO			
A 245W			P1-F30 P3-R1					.15 .19	NO NO		7, 18 4	
A 246	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 246B	2		E20-B SHLD A246					.25 .25	NO NO			
A 246W			P1-F31 P3-R2					.15 .19	NO NO		7, 18 4	
A 247	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 247B	2		E20-B SHLD A247					.25 .25	NO NO			
A 247W			P1-F32 P3-R3					.15 .19	NO NO		7, 18 4	
A 248	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 248B	2		E20-B SHLD A248					.25 .25	NO NO			
A 248W			P1-F33 P3-R4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 64 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 249	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 249B	2		E20-B SHLD A249					.25 .25	NO NO			
A 249W			P1-F34 P3-R5					.15 .19	NO NO		7, 18 4	
A 250	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 250B	2		E20-B SHLD A250					.25 .25	NO NO			
A 250W			P1-F35 P3-R6					.15 .19	NO NO		7, 18 4	
A 251	1				6.25 3.25	6.00 3.00				8,7 A,6A	9 8, 9	
A 251B	2		E20-B SHLD A251					.25 .25	NO NO			
A 251W			P1-G26 P3-R7					.15 .19	NO NO		7, 18 4	
A 252	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 252B	2		E20-B SHLD A252					.25 .25	NO NO			
A 252W			P1-G27 P3-R8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 65 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 253	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 253B	2		E20-B SHLD A253					.25 .25	NO NO			
A 253W			P1-G28 P3-S1					.15 .19	NO NO		7, 18 4	
A 254	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 254B	2		E20-B SHLD A254					.25 .25	NO NO			
A 254W			P1-G29 P3-S2					.15 .19	NO NO		7, 18 4	
A 255	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 255B	2		E20-B SHLD A255					.25 .25	NO NO			
A 255W			P1-G30 P3-S3					.15 .19	NO NO		7, 18 4	
A 256	1				6.75 3.75	6.50 3.50				8,7 A,6A	9 8, 9	
A 256B	2		E20-B SHLD A256					.25 .25	NO NO			
A 256W			P1-G31 P3-S4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 66 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 257	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 257B	2		E21-B SHLD A257					.25 .25	NO NO			
A 257W			P1-G32 P3-S5					.15 .19	NO NO		7, 18 4	
A 258	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 258B	2		E21-B SHLD A258					.25 .25	NO NO			
A 258W			P1-G33 P3-S6					.15 .19	NO NO		7, 18 4	
A 259	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 259B	2		E21-B SHLD A259					.25 .25	NO NO			
A 259W			P1-G34 P3-S7					.15 .19	NO NO		7, 18 4	
A 260	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 260B	2		E21-B SHLD A260					.25 .25	NO NO			
A 260W			P1-G35 P3-S8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 67 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 261	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 261B	2		E21-B SHLD A261					.25 .25	NO NO			
A 261W			P1-H26 P3-T1					.15 .19	NO NO		7, 18 4	
A 262	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 262B	2		E21-B SHLD A262					.25 .25	NO NO			
A 262W			P1-H27 P3-T2					.15 .19	NO NO		7, 18 4	
A 263	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 263B	2		E21-B SHLD A263					.25 .25	NO NO			
A 263W			P1-H28 P3-T3					.15 .19	NO NO		7, 18 4	
A 264	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 264B	2		E21-B SHLD A264					.25 .25	NO NO			
A 264W			P1-H29 P3-T4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 68 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 265	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 265B	2		E21-B SHLD A265					.25 .25	NO NO			
A 265W			P1-H30 P3-T5					.15 .19	NO NO		7, 18 4	
A 266	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 266B	2		E21-B SHLD A266					.25 .25	NO NO			
A 266W			P1-H31 P3-T6					.15 .19	NO NO		7, 18 4	
A 267	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 267B	2		E21-B SHLD A267					.25 .25	NO NO			
A 267W			P1-H32 P3-T7					.15 .19	NO NO		7, 18 4	
A 268	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 268B	2		E21-B SHLD A268					.25 .25	NO NO			
A 268W			P1-H33 P3-T8					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 69 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 269	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 269B	2		E22-B SHLD A269					.25 .25	NO NO			
A 269W			P1-H34 P3-U1					.15 .19	NO NO		7, 18 4	
A 270	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 270B	2		E22-B SHLD A270					.25 .25	NO NO			
A 270W			P1-H35 P3-U2					.15 .19	NO NO		7, 18 4	
A 271	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 271B	2		E22-B SHLD A271					.25 .25	NO NO			
A 271W			P1-K26 P3-U3					.15 .19	NO NO		7, 18 4	
A 272	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 272B	2		E22-B SHLD A272					.25 .25	NO NO			
A 272W			P1-K27 P3-U4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~E
SHEET 70 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 273	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 273B	2		E22-B SHLD A273					.25 .25	NO NO			
A 273W			P1-K28 P3-U5					.15 .19	NO NO		7, 16 4	
A 274	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 274B	2		E22-B SHLD A274					.25 .25	NO NO			
A 274W			P1-K29 P3-U6					.15 .19	NO NO		7, 18 4	
A 275	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 275B	2		E22-B SHLD A275					.25 .25	NO NO			
A 275W			P1-K30 P3-U7					.15 .19	NO NO		7, 18 4	
A 276	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 276B	2		E22-B SHLD A276					.25 .25	NO NO			
A 276W			P1-K31 P3-U8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 71 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 277	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 277B	2		E22-B SHLD A277					.25 .25	NO NO			
A 277W			P1-K32 P3-V1					.15 .19	NO NO		7, 18 4	
A 278	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 278B	2		E22-B SHLD A278					.25 .25	NO NO			
A 278W			P1-K33 P3-V2					.15 .19	NO NO		7, 18 4	
A 279	6		E1-BB E23-B					.25 .25	NO NO			
A 280	6		E2-BB E23-B					.25 .25	NO NO			
A 281	6		E3-BB E23-B					.25 .25	NO NO			
A 282	6		E4-BB E23-B					.25 .25	NO NO			
A 283	6		E5-BB E23-B					.25 .25	NO NO			
A 284	6		E6-BB E23-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 72 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 285	6		E7-BB E23-B					.25 .25	NO NO			
A 286	6		E8-BB E23-B					.25 .25	NO NO			
A 287	6		E9-BB E23-B					.25 .25	NO NO			
A 288	6		E10-BB E23-B					.25 .25	NO NO			
A 289	6		E11-BB E23-B					.25 .25	NO NO			
A 290	6		E12-BB E23-B					.25 .25	NO NO			
A 291	6		E13-BB E24-B					.25 .25	NO NO			
A 292	6		E14-BB E24-B					.25 .25	NO NO			
A 293	6		E15-BB E24-B					.25 .25	NO NO			
A 294	6		E16-BB E24-B					.25 .25	NO NO			
A 295	6		E17-BB E24-B					.25 .25	NO NO			
A 296	6		E18-BB E24-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 73 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 297	6		E19-BB E24-B					.25 .25	NO NO			
A 298	6		E20-BB E24-B					.25 .25	NO NO			
A 299	6		E21-BB E24-B					.25 .25	NO NO			
A 300	6		E22-BB E24-B					.25 .25	NO NO			
A 301	5		E23-BB P2-X6					.19 .19	NO NO		 25	
A 302	5		E24-BB P3-X6					.19 .19	NO NO		 25	

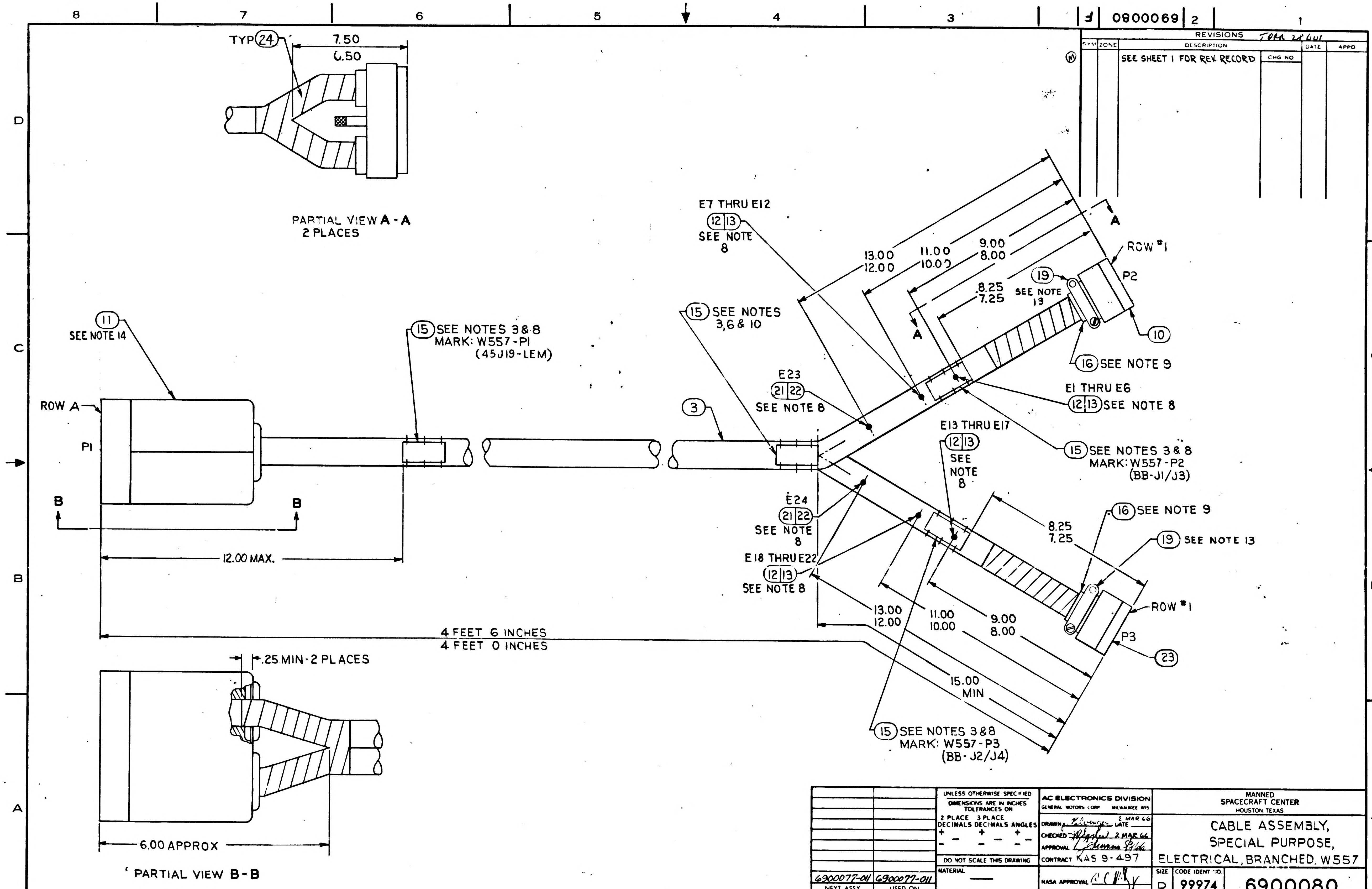
SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 74 OF 75

MIL 2084 9-65

0800069

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
		SEE SHEET 1 FOR REV. RECORD			

REVISIONS TDRR 28601



TYP (24)
7.50
6.50
PARTIAL VIEW A-A
2 PLACES
(11) SEE NOTE 14
ROW A
P1
B
B
12.00 MAX.
(15) SEE NOTES 3&8
MARK: W557-P1
(45J19-LEM)
(3)
(15) SEE NOTES 3,6 & 10
E7 THRU E12
(12)(13) SEE NOTE 8
13.00
12.00
11.00
10.00
9.00
8.00
8.25
7.25
A
A
ROW #1
P2
(19) SEE NOTE 13
(10)
(16) SEE NOTE 9
E1 THRU E6
(12)(13) SEE NOTE 8
E23
(21)(22) SEE NOTE 8
(15) SEE NOTES 3 & 8
MARK: W557-P2
(BB-J1/J3)
E13 THRU E17
(12)(13) SEE NOTE 8
E24
(21)(22) SEE NOTE 8
E18 THRU E22
(12)(13) SEE NOTE 8
8.25
7.25
(16) SEE NOTE 9
(19) SEE NOTE 13
ROW #1
P3
(23)
13.00
12.00
11.00
10.00
9.00
8.00
15.00 MIN
4 FEET 6 INCHES
4 FEET 0 INCHES
.25 MIN-2 PLACES
6.00 APPROX
PARTIAL VIEW B-B
(15) SEE NOTES 3&8
MARK: W557-P3
(BB-J2/J4)

6900077-011	6900077-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN Kilonger 2 MAR 66 DATE
CHECKED 2 MAR 66
APPROVAL 3/7/66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 5-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W557

SIZE D
CODE IDENT NO. 99974
6900080
SCALE NONE
SHEET 75 OF 75

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV. A WITH CHG. PER MXC 209931	16MAR 66	DKD Joh
C	REVISED PER MXC 210437	31 MAR 66	R.W. T.J. mlm
D	REVISED PER MXC 211614	22 APR 66	RP RWH
Ⓜ E	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	J.H.? EF
F	REVISED PER TDRR 30476	11AUG66	RW RLW
G	REVISED PER TDRR 30509	24 AUG 66	MGA JJK

REV		E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	F	E	E	E	E	E
SHEET		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
REV STATUS OF SHEETS	REV			G	G	F	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
	SHEET			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN J. Kelvinger 2 MAR 66
DAY MO YR
CHECKER Haylor 3MAR 66
ENGINEER J. Tyson 3MAR 66
APPROVAL C. Jaeckman 5/3/66
CONTR NO. NAS9-497

NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED W557

SIZE A | CODE IDENT. NO 99974 | 6900080
SCALE NONE | SHEET 1 OF 75

MIL 1377A6 12-65

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
48	E																
49	E																
50	G																
51	G																
52	E																
53	E																
54	E																
55	E																
56	E																
57	E																
58	E																
59	G																
60	E																
61	E																
62	E																
63	E																
64	E																
65	E																
66	E																
67	E																
68	E																
69	E																
70	E																
71	E																
72	E																
73	E																
74	E																
75	F																

SIZE A | CODE IDENT. NO. 99974 | 6900080
SCALE NONE | REV LTR G | SHEET 2 OF 75

MIL 1377A3 8-65

NOTE NUMBER — GENERAL NOTES — DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER –
A – ND1002071
B – ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 17.

4 VENDOR ITEM – SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

5 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

7 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER –
A – FROM END SHIELD
B – TO END SHIELD
W – WHITE

8 MARK REFERENCE DESIGNATIONS SHOWN PER ND1002019, HOT IMPRESSION STAMPING, USING .12 BLACK CHARACTERS CENTRALIZED.

9 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 16 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP. USE ONLY IF REQUIRED.

10 SERIALIZE PER ND1002023.

11 LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES

12 ASSEMBLE PER ND1002032

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR F	SHEET 3 OF 75	

NOTE NUMBER — GENERAL NOTES — DESCRIPTION

13 AT ASSEMBLY OF ITEM 19 REMOVE 4 SELF-LOCKING NUTS SECURING LOCATING PINS TO CONNECTOR AND DISCARD. ATTACH ITEM 19 USING LOCATING PINS.

14 SPOT TIE GROUPS OF LEADS ADJACENT TO INTERNAL CLAMP (CONNECTOR SIDE). USE ITEM 24 TO SHAPE WIRE BUNDLE IN CLAMP. USE ITEM 16 TO SECURE WIRE BUNDLE IN CLAMP, IF REQUIRED.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR F	SHEET 4 OF 75	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900080-001	WIRE ND1002181 TYPE 1 CLASS 4 22 AWG WHT JKT WHT 1048 FT TOTAL LENGTH
	2	1	6900080-002	WIRE ND1002181 TYPE 1 CLASS 1 24 AWG WHT 131 FT TOTAL LENGTH
	3	1	6900080-006	ZIPPER TUBING PER ND1002155 TYPE 4 GREY 2.0, 2.0 DIA 4 FT TOTAL LENGTH 2 CHANNEL
4	4	262	1016369-421	CONTACT, SOCKET
	5	1	6900080-005	WIRE ND1002181 TYPE 1 CLASS 1 16 AWG WHT 2 FT TOTAL LENGTH
	6	1	6900080-004	WIRE ND1002181 TYPE 1 CLASS 1 20 AWG WHT 8 FT TOTAL LENGTH
4	7	262	1897300-002	CONTACT, SPRING SOCKET
4	8	262	1010763-002	SOLDER SLEEVE
4	9	524	1010490-232	INSULATION SLEEVING SHRINK FIT
	10	1	2901434-011	CONNECTOR
4	11	1	6900087-011	CONNECTOR
4	12	22	1016006-002	SPLICE REDUCER
4	13	22	1010490-258	INSULATION SLEEVING SHRINK FIT
	14		1015902-003	DELETED
4	15	4	1016128-021	BAND IDENTIFICATION

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR F	SHEET 5 OF 75	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	16	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A, CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	17	AR	MIL-T-713B TYPE P CLASS 2,BLK	LACING TAPE
4	18	262	1015864-232	INSULATION SLEEVING, ELECT.
4	19	2	1897391	CLAMP, CABLE DUAL ENTRY
	20		1010490-166	DELETED
4	21	2	1016006-004	SPLICE REDUCER
4	22	2	1010490-342	INSULATION SLEEVING SHRINK FIT
4	23	1	2901434-021 ~~1897336-002~~	CONNECTOR
	24	AR	MIL-I-15126 TYPE ACT	INSULATION TAPE ELEC PRESSURE SENSITIVE THERMO SETTING ADHESIVE, .75 + OR -.03 WIDE (ES2716 TYPE C)
	25	2	1016369-721	CONTACT, SOCKET

SIZE A	CODE IDENT NO. 99974	6900080	
SCALE-NONE	REV LTR ~~C~~ ~~D~~ E	SHEET 6 OF 75	

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 3	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 3B	2		E1-B SHLD A3					.25 .25	NO NO			
A 3W			P1-A3 P2-A5					.15 .19	NO NO		7, 18 4	
A 4	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 4B	2		E1-B SHLD A4					.25 .25	NO NO			
A 4W			P1-A4 P2-A6					.15 .19	NO NO		7, 18 4	
A 5	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 5B	2		E1-B SHLD A5					.25 .25	NO NO			
A 5W			P1-A5 P2-B1					.15 .19	NO NO		7, 18 4	
A 6	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 6B	2		E1-B SHLD A6					.25 .25	NO NO			
A 6W			P1-A6 P2-B2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 7 OF 75
MIL 2084 9-65

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 7	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 7B	2		E1-B SHLD A7					.25 .25	NO NO			
A 7W			P1-A7 P2-B3					.15 .19	NO NO		7, 18 4	
A 8	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 8B	2		E1-B SHLD A8					.25 .25	NO NO			
A 8W			P1-A8 P2-B4					.15 .19	NO NO		7, 18 4	
A 9	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 9B	2		E1-B SHLD A9					.25 .25	NO NO			
A 9W			P1-A9 P2-B5					.15 .19	NO NO		7, 18 4	
A 10	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 10B	2		E1-B SHLD A10					.25 .25	NO NO			
A 10W			P1-A10 P2-B6					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 8 OF 75
MIL 2084 9-65

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 11	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 11B	2		E1-B SHLD A11					.25 .25	NO NO			
A 11W			P1-A11 P2-B7					.15 .19	NO NO		7, 18 4	
A 12	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 12B	2		E1-B SHLD A12					.25 .25	NO NO			
A 12W			P1-A12 P2-B8					.15 .19	NO NO		7, 18 4	
A 13	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 13B	2		E1-B SHLD A13					.25 .25	NO NO			
A 13W			P1-A13 P2-C1					.15 .19	NO NO		7, 18 4	
A 14	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 14B	2		E1-B SHLD A14					.25 .25	NO NO			
A 14W			P1-A14 P2-C2					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 9 OF 75
MIL 2084 9-65

CABLE W557 6900080 E ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 15	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 15B	2		E2-B SHLD A15					.25 .25	NO NO			
A 15W			P1-A15 P2-C3					.15 .19	NO NO		7, 18 4	
A 16	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 16B	2		E2-B SHLD A16					.25 .25	NO NO			
A 16W			P1-B1 P2-C4					.15 .19	NO NO		7, 18 4	
A 17	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 17B	2		E2-B SHLD A17					.25 .25	NO NO			
A 17W			P1-B2 P2-C5					.15 .19	NO NO		7, 18 4	
A 18	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 18B	2		E2-B SHLD A18					.25 .25				
A 18W			P1-B3 P2-C6					.15 .19			7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~B~~ E
SHEET 10 OF 75
MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 19	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-B4 P2-C7					.15 .19	NO NO		7, 18 4	
A 20	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 20B	2		E2-B SHLD A20					.25 .25	NO NO			
A 20W			P1-B5 P2-C8					.15 .19	NO NO		7, 18 4	
A 21	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 21B	2		E2-B SHLD A21					.25 .25	NO NO			
A 21W			P1-B6 P2-D1					.15 .19	NO NO		7, 18 4	
A 22	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 22B	2		E2-B SHLD A22					.25 .25	NO NO			
A 22W			P1-B7 P2-D2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 11 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 23	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 23B	2		E2-B SHLD A23					.25 .25	NO NO			
A 23W			P1-B8 P2-D3					.15 .19	NO NO		7, 18 4	
A 24	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 24B	2		E2-B SHLD A24					.25 .25	NO NO			
A 24W			P1-B9 P2-D4					.15 .19	NO NO		7, 18 4	
A 25	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 25B	2		E2-B SHLD A25					.25 .25	NO NO			
A 25W			P1-B10 P2-D5					.15 .19	NO NO		7, 18 4	
A 26	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 26B	2		E2-B SHLD A26					.25 .25	NO NO			
A 26W			P1-B11 P2-D6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 12 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 27	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 27B	2		E3-B SHLD A27					.25 .25	NO NO			
A 27W			P1-B12 P2-D7					.15 .19	NO NO		7, 18 4	
A 28	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 28B	2		E3-B SHLD A28					.25 .25	NO NO			
A 28W			P1-B13 P2-D8					.15 .19	NO NO		7, 18 4	
A 29	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 29B	2		E3 SHLD A29					.25 .25	NO NO			
A 29W			P1-B14 P2-E1					.15 .19	NO NO		7, 18 4	
A 30	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 30B	2		E3 SHLD A30					.25 .25	NO NO			
A 30W			P1-B15 P2-E2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 13 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 31	1				6.75 6.75	6.50 6.50				B,7 A,6A		
A 31B	2		E3 SHLD A31					.25 .25	NO NO			
A 31W			P1-C1 P2-E3					.15 .19	NO NO		7, 18 4	
A 32	1				6.75 6.75	6.50 6.50				B,7 A,6A	9 8, 9	
A 32B	2		E3 SHLD A32					.25 .25	NO NO			
A 32W			P1-C2 P2-E4					.15 .19	NO NO		7, 18 4	
A 33	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 33B	2		E3-B SHLD A33					.25 .25	NO NO			
A 33W			P1-C3 P2-E5					.15 .19	NO NO		7, 18 4	
A 34	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 34B	2		E3-B SHLD A34					.25 .25	NO NO			
A 34W			P1-C4 P2-E6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 14 OF 75

MIL 2084 9-65

CABLE W557 6900080 E B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 35	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 35B	2		E3-8 SHLD A35					.25 .25	NO NO			
A 35W			P1-C5 P2-E7					.15 .19	NO NO		7, 18 4	
A 36	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 36B	2		E3-8 SHLD A36					.25 .25	NO NO			
A 36W			P1-C6 P2-E8					.15 .19	NO NO		7, 18 4	
A 37	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 37B	2		E3-8 SHLD A37					.25 .25	NO NO			
A 37W			P1-C7 P2-F1					.15 .19	NO NO		7, 18 4	
A 38	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 38B	2		E3-8 SHLD A38					.25 .25	NO NO			
A 38W			P1-C8 P2-F2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR B E	SHEET 15 OF 75

CABLE W557 6900080 E B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 39	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 39B	2		E4-8 SHLD A39					.25 .25	NO NO			
A 39W			P1-C9 P2-F3					.15 .19	NO NO		7, 18 4	
A 40	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 40B	2		E4-8 SHLD A40					.25 .25	NO NO			
A 40W			P1-C10 P2-F4					.15 .19	NO NO		7, 18 4	
A 41	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 41B	2		E4-8 SHLD A41					.25 .25	NO NO			
A 41W			P1-C11 P2-F5					.15 .19	NO NO		7, 18 4	
A 42	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 42B	2		E4-8 SHLD A42					.25 .25	NO NO			
A 42W			P1-C12 P2-F6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR B E	SHEET 16 OF 75

CABLE W557 6900080 E B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 43	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 43B	2		E4-8 SHLD A43					.25 .25	NO NO			
A 43W			P1-C13 P2-F7					.15 .19	NO NO		7, 18 4	
A 44	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 44B	2		E4-8 SHLD A44					.25 .25	NO NO			
A 44W			P1-C14 P2-F8					.15 .19	NO NO		7, 18 4	
A 45	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 45B	2		E4-8 SHLD A45					.25 .25	NO NO			
A 45W			P1-C15 P2-G1					.15 .19	NO NO		7, 18 4	
A 46	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 46B	2		E4-8 SHLD A46					.25 .25	NO NO			
A 46W			P1-D1 P2-G2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR B E	SHEET 17 OF 75

CABLE W557 6900080 E B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 47	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 47B	2		E4-8 SHLD A47					.25 .25	NO NO			
A 47W			P1-D2 P2-G3					.15 .19	NO NO		7, 18 4	
A 48	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 48B	2		E4-8 SHLD A48					.25 .25	NO NO			
A 48W			P1-D3 P2-G4					.15 .19	NO NO		7, 18 4	
A 49	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 49B	2		E4-8 SHLD A49					.25 .25	NO NO			
A 49W			P1-D4 P2-G5					.15 .19	NO NO		7, 18 4	
A 50	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 50B	2		E4-8 SHLD A50.					.25 .25	NO NO			
A 50W			P1-D5 P2-G6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR B E	SHEET 18 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	51	1			5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	51B	2		E5-B SHLD A51				.25 .25	NO NO			
A	51W			P1-D6 P2-G7				.15 .19	NO NO		7, 18 4	
A	52	1			5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	52B	2		E5-B SHLD A52				.25 .25	NO NO			
A	52W			P1-D7 P2-G8				.15 .19	NO NO		7, 18 4	
A	53	1			5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	53B	2		E5-B SHLD A53				.25 .25	NO NO			
A	53W			P1-D8 P2-H1				.15 .19	NO NO		7, 18 4	
A	54	1			5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	54B	2		E5-B SHLD A54				.25 .25	NO NO			
A	54W			P1-D9 P2-H2				.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 19 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	55	1			5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	55B	2		E5-B SHLD A55				.25 .25	NO NO			
A	55W			P1-D10 P2-H3				.15 .19	NO NO		7, 18 4	
A	56	1			5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A	56B	2		E5-B SHLD A56				.25 .25	NO NO			
A	56W			P1-D11 P2-H4				.15 .19	NO NO		7, 18 4	
A	57	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	57B	2		E5-B SHLD A57				.25 .25	NO NO			
A	57W			P1-D12 P2-H5				.15 .19	NO NO		7, 18 4	
A	58	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	58B	2		E5-B SHLD A58				.25 .25	NO NO			
A	58W			P1-D13 P2-H6				.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 20 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	59	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	59B	2		E5-B SHLD A59				.25 .25	NO NO			
A	59W			P1-D14 P2-H7				.15 .19	NO NO		7, 18 4	
A	60	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	60B	2		E5-B SHLD A60				.25 .25	NO NO			
A	60W			P1-D15 P2-H8				.15 .19	NO NO		7, 18 4	
A	61	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	61B	2		E5-B SHLD A61				.25 .25	NO NO			
A	61W			P1-F1 P2-J1				.15 .19	NO NO		7, 18 4	
A	62	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	62B	2		E5-B SHLD A62				.25 .25	NO NO			
A	62W			P1-F2 P2-J2				.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 21 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	63	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	63B	2		E6-B SHLD A63				.25 .25	NO NO			
A	63W			P1-F3 P2-J3				.15 .19	NO NO		7, 18 4	
A	64	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	64B	2		E6-B SHLD A64				.25 .25	NO NO			
A	64W			P1-F4 P2-J4				.15 .19	NO NO		7, 18 4	
A	65	1			5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A	65B	2		E6-B SHLD A65				.25 .25	NO NO			
A	65W			P1-F5 P2-J5				.15 .19	NO NO		7, 18 4	
A	66	1			4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A	66B	2		E6-B SHLD A66				.25 .25	NO NO			
A	66W			P1-F6 P2-J6				.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR E
SHEET 22 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 67	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 67B	2		E6-B SHLD A67					.25 .25	NO NO			
A 67W			P1-F7 P2-J7					.15 .19	NO NO		7, 18 4	
A 68	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 68B	2		E6-B SHLD A68					.25 .25	NO NO			
A 68W			P1-F8 P2-J8					.15 .19	NO NO		7, 18 4	
A 69	1				4.75 4.75	4.00 4.00				B,7 A,6A	9 8, 9	
A 69B	2		E6-B SHLD A69					.25 .25	NO NO			
A 69W			P1-F9 P2-K1					.15 .19	NO NO		7, 18 4	
A 70	1				7.25 6.25	7.00 6.C0				B,7 A,6A	9 8, 9	
A 70B	2		E6-B SHLD A70					.25 .25	NO NO			
A 70W			P1-F10 P2-K2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR E | SHEET 23 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 71	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 71B	2		E6-B SHLD A71					.25 .25	NO NO			
A 71W			P1-F11 P2-K3					.15 .19	NO NO		7, 18 4	
A 72	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 72B	2		E6-B SHLD A72					.25 .25	NO NO			
A 72W			P1-F12 P2-K6					.15 .19	NO NO		7, 18 4	
A 73	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 73B	2		E6-B SHLD A73					.25 .25	NO NO			
A 73W			P1-F13 P2-K7					.15 .19	NO NO		7, 18 4	
A 74	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 74B	2		E6-B SHLD A74					.25 .25	NO NO			
A 74W			P1-F14 P2-K8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR E | SHEET 24 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 75	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 75B	2		E7-B SHLD A75					.25 .25	NO NO			
A 75W			P1-F15 P2-L1					.15 .19	NO NO		7, 18 4	
A 76	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 76B	2		E7-B SHLD A76					.25 .25	NO NO			
A 76W			P1-G1 P2-L2					.15 .19	NO NO		7, 18 4	
A 77	1				7.75 6.75	7.00 6.00				B,7 A,6A	9 8, 9	
A 77B	2		E7-B SHLD A77					.25 .25	NO NO			
A 77W			P1-G2 P2-L7					.15 .19	NO NO		7, 18 4	
A 78	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 78B	2		E7-B SHLD A78					.25 .25	NO NO			
A 78W			P1-G3 P2-L8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR E | SHEET 25 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 79B	2		E7-B SHLD A79					.25 .25	NO NO			
A 79W			P1-G4 P2-M1					.15 .19	NO NO		7, 18 4	
A 80	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 80B	2		E7-B SHLD A80					.25 .25	NO NO			
A 80W			P1-G5 P2-M2					.15 .19	NO NO		7, 18 4	
A 81	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 81B	2		E7-B SHLD A81					.25 .25	NO NO			
A 81W			P1-G6 P2-M3					.15 .19	NO NO		7, 18 4	
A 82	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 82B	2		E7-B SHLD A82					.25 .25	NO NO			
A 82W			P1-G7 P2-M6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080
SCALE-NONE | REV LTR E | SHEET 26 OF 75

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 83	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 83B	2		E7-B SHLD A83					.25 .25	NO NO			
A 83W			P1-G8 P2-M7					.15 .19	NO NO		7, 18 4	
A 84	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 84B	2		E7-B SHLD A84					.25 .25	NO NO			
A 84W			P1-G9 P2-M8					.15 .19	NO NO		7, 18 4	
A 85	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 85B	2		E7-B SHLD A85					.25 .25	NO NO			
A 85W			P1-G10 P2-N1					.15 .19	NO NO		7, 18 4	
A 86	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 86B	2		E7-B SHLD A86					.25 .25	NO NO			
A 86W			P1-G11 P2-N2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 27 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 87	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 87B	2		E8-B SHLD A87					.25 .25	NO NO			
A 87W			P1-G12 P2-N3					.15 .19	NO NO		7, 18 4	
A 88	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 88B	2		E8-B SHLD A88					.25 .25	NO NO			
A 88W			P1-G13 P2-N4					.15 .19	NO NO		7, 18 4	
A 89	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 89B	2		E8-B SHLD A89					.25 .25	NO NO			
A 89W			P1-G14 P2-N5					.15 .19	NO NO		7, 18 4	
A 90	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 90B	2		E8-B SHLD A90					.25 .25	NO NO			
A 90W			P1-G15 P2-N6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 28 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 91B	2		E8-B SHLD A91					.25 .25	NO NO			
A 91W			P1-H1 P2-N7					.15 .19	NO NO		7, 18 4	
A 92	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 92B	2		E8-B SHLD A92					.25 .25	NO NO			
A 92W			P1-H2 P2-N8					.15 .19	NO NO		7, 18 4	
A 93	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 93B	2		E8-B SHLD A93					.25 .25	NO NO			
A 93W			P1-H3 P2-P1					.15 .19	NO NO		7, 18 4	
A 94	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 94B	2		E8-B SHLD A94					.25 .25	NO NO			
A 94W			P1-H4 P2-P2					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 29 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 95	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 95B	2		E8-B SHLD A95					.25 .25	NO NO			
A 95W			P1-H5 P2-P3					.15 .19	NO NO		7, 18 4	
A 96	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 96B	2		E8-B SHLD A96					.25 .25	NO NO			
A 96W			P1-H6 P2-P4					.15 .19	NO NO		7, 18 4	
A 97	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 97B	2		E8-B SHLD A97					.25 .25	NO NO			
A 97W			P1-H7 P2-P5					.15 .19	NO NO		7, 18 4	
A 98	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 98B	2		E8-B SHLD A98					.25 .25	NO NO			
A 98W			P1-H8 P2-P6					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 30 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 99	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 99B	2		E9-B SHLD A99					.25 .25	NO NO			
A 99W			P1-H9 P2-P7					.15 .19	NO NO		7, 18 4	
A 100	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 100B	2		E9-B SHLD A100					.25 .25	NO NO			
A 100W			P1-H10 P2-P8					.15 .19	NO NO		7, 18 4	
A 101	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 101B	2		E9-B SHLD A101					.25 .25	NO NO			
A 101W			P1-H11 P2-R1					.15 .19	NO NO		7, 18 4	
A 102	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 102B	2		E9-B SHLD A102					.25 .25	NO NO			
A 102W			P1-H12 P2-R2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 31 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 103B	2		E9-B SHLD A103					.25 .25	NO NO			
A 103W			P1-H13 P2-R3					.15 .19	NO NO		7, 18 4	
A 104	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 104B	2		E9-B SHLD A104					.25 .25	NO NO			
A 104W			P1-H14 P2-R4					.15 .19	NO NO		7, 18 4	
A 105	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 105B	2		E9-B SHLD A105					.25 .25	NO NO			
A 105W			P1-H15 P2-R5					.15 .19	NO NO		7, 18 4	
A 108	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 108B	2		E9-B SHLD A108					.25 .25	NO NO			
A 108W			P1-K3 P2-R8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 32 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 109B	2		E9-B SHLD A109					.25 .25	NO NO			
A 109W			P1-K4 P2-S1					.15 .19	NO NO		7, 18 4	
A 110	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 110B	2		E9-B SHLD A110					.25 .25	NO NO			
A 110W			P1-K5 P2-S2					.15 .19	NO NO		7, 18 4	
A 111	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 111B	2		E9-B SHLD A111					.25 .25	NO NO			
A 111W			P1-K6 P2-S3					.15 .19	NO NO		7, 18 4	
A 112	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 112B	2		E9-B SHLD A112					.25 .25	NO NO			
A 112W			P1-K7 P2-S4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 33 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 113	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 113B	2		E10-B SHLD A113					.25 .25	NO NO			
A 113W			P1-K8 P2-S5					.15 .19	NO NO		7, 18 4	
A 114	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 114B	2		E10-B SHLD A114					.25 .25	NO NO			
A 114W			P1-K9 P2-S6					.15 .19	NO NO		7, 18 4	
A 115	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 115B	2		E10-B SHLD A115					.25 .25	NO NO			
A 115W			P1-K10 P2-S7					.15 .19	NO NO		7, 18 4	
A 116	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 116B	2		E10-B SHLD A116					.25 .25	NO NO			
A 116W			P1-K11 P2-S8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~E	SHEET 34 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 117	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 117B	2		E10-B SHLD A117					.25 .25	NO NO			
A 117W			P1-K12 P2-T1					.15 .19	NO NO		7, 18 4	
A 118	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 118B	2		E10-B SHLD A118					.25 .25	NO NO			
A 118W			P1-K13 P2-T2					.15 .19	NO NO		7, 18 4	
A 119	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 119B	2		E10-B SHLD A119					.25 .25	NO NO			
A 119W			P1-K14 P2-T3					.15 .19	NO NO		7, 18 4	
A 120	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 120B	2		E10-B SHLD A120					.25 .25	NO NO			
A 120W			P1-K15 P2-T4					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE REV LTR ~~B~~ E SHEET 35 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 126B	2		E10-B SHLD A126					.25 .25	NO NO			
A 126W			P1-A21 P2-U2					.15 .19	NO NO		7, 18 4	
A 127	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 127B	2		E10-B SHLD A127					.25 .25	NO NO			
A 127W			P1-A22 P2-U3					.15 .19	NO NO		7, 18 4	
A 128	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 128B	2		E10-B SHLD A128					.25 .25	NO NO			
A 128W			P1-A23 P2-U4					.15 .19	NO NO		7, 18 4	
A 129	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 129B	2		E10-B SHLD A129					.25 .25	NO NO			
A 129W			P1-A24 P2-U5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE REV LTR ~~B~~ E SHEET 36 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 130	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 130B	2		E11-B SHLD A130					.25 .25	NO NO			
A 130W			P1-A25 P2-U6					.15 .19	NO NO		7, 18 4	
A 131	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 131B	2		E11-B SHLD A131					.25 .25	NO NO			
A 131W			P1-B16 P2-U7					.15 .19	NO NO		7, 18 4	
A 132	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 132B	2		E11-B SHLD A132					.25 .25	NO NO			
A 132W			P1-B17 P2-U8					.15 .19	NO NO		7, 18 4	
A 133	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 133B	2		E11-B SHLD A133					.25 .25	NO NO			
A 133W			P1-B18 P2-V1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE REV LTR ~~B~~ E SHEET 37 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 134	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 134B	2		E11-B SHLD A134					.25 .25	NO NO			
A 134W			P1-B19 P2-V2					.15 .19	NO NO		7, 18 4	
A 135	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 135B	2		E11-B SHLD A135					.25 .25	NO NO			
A 135W			P1-B20 P2-V3					.15 .19	NO NO		7, 18 4	
A 136	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 136B	2		E11-B SHLD A136					.25 .25	NO NO			
A 136W			P1-B21 P2-V4					.15 .19	NO NO		7, 18 4	
A 137	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 137B	2		E11-B SHLD A137					.25 .25	NO NO			
A 137W			P1-B22 P2-V5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE REV LTR ~~B~~ E SHEET 38 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	TERM. JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 138	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 138B	2		E11-B SHLD A138					.25 .25	NO NO			
A 138W			P1-B23 P2-V6					.15 .19	NO NO		7, 18 4	
A 139	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 139B	2		E11-B SHLD A139					.25 .25	NO NO			
A 139W			P1-B24 P2-V7					.15 .19	NO NO		7, 18 4	
A 140	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 140B	2		E11-B SHLD A140					.25 .25	NO NO			
A 140W			P1-B25 P2-V8					.15 .19	NO NO		7, 18 4	
A 141	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 141B	2		E11-B SHLD A141					.25 .25	NO NO			
A 141W			P1-C16 P2-W1					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~ E
SHEET 39 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	TERM. JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 142	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 142B	2		E12-B SHLD A142					.25 .25	NO NO			
A 142W			P1-C17 P2-W2					.15 .19	NO NO		7, 18 4	
A 143	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 143B	2		E12-B SHLD A143					.25 .25	NO NO			
A 143W			P1-C18 P2-W3					.15 .19	NO NO		7, 18 4	
A 144	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 144B	2		E12-B SHLD A144					.25 .25	NO NO			
A 144W			P1-C19 P2-W4					.15 .19	NO NO		7, 18 4	
A 145	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 145B	2		E12-B SHLD A145					.25 .25	NO NO			
A 145W			P1-C20 P2-W5					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~ E
SHEET 40 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	TERM. JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 146	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 146B	2		E12-B SHLD A146					.25 .25	NO NO			
A 146W			P1-C21 P2-W6					.15 .19	NO NO		7, 18 4	
A 147	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 147B	2		E12-B SHLD A147					.25 .25	NO NO			
A 147W			P1-C22 P2-W7					.15 .19	NO NO		7, 18 4	
A 148	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 148B	2		E12-B SHLD A148					.25 .25	NO NO			
A 148W			P1-C23 P2-W8					.15 .19	NO NO		7, 18 4	
A 149	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 149B	2		E12-B SHLD A149					.25 .25	NO NO			
A 149W			P1-C24 P2-X3					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR ~~D~~ E
SHEET 41 OF 75

MIL 2084 9-65

CABLE W557 6900080 F

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. JKT AREA NO.	TERM. JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 150	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 150B	2		E12-B SHLD A150					.25 .25	NO NO			
A 150W			P1-C25 P2-X4					.15 .19	NO NO		7, 18 4	
A 151	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 151B	2		E12-B SHLD A151					.25 .25	NO NO			
A 151W			P1-D16 P2-X5					.15 .19	NO NO		7, 18 4	
A 152	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 152B	2		E22-B SHLD A152					.25 .25	NO NO			
A 152W			P1-D17 P3-X5					.15 .19	NO NO		7, 18 4	
A 153	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 153B	2		E13-B SHLD A153					.25 .25	NO NO			
A 153W			P1-D18 P3-A3					.15 .19	NO NO		7, 18 4	

SIZE A
CODE IDENT NO. 99974
6900080
SCALE-NONE
REV LTR F
SHEET 42 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 154	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 154B	2		E13-B SHLD A154					.25 .25	NO NO			
A 154W			P1-D19 P3-A4					.15 .19	NO NO		7, 18 4	
A 155	1				5.25 5.25	5.00 5.00				8,7 A,6A	9 8, 9	
A 155B	2		E13-B SHLD A155					.25 .25	NO NO			
A 155W			P1-D20 P3-A5					.15 .19	NO NO		7, 18 4	
A 156	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 156B	2		E13-B SHLD A156					.25 .25				
A 156W			P1-D21 P3-A6					.15 .19			7, 18 4	
A 157	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 157B	2		E13-B SHLD A157					.25 .25				
A 157W			P1-D22 P3-B1					.15 .19			7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080		
SCALE-NONE	REV LTR	~~D~~E	SHEET 43 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 158	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 158B	2		E13-B SHLD A158					.25 .25				
A 158W			P1-D23 P3-B2					.15 .19			7, 18 4	
A 159	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 159B	2		E13-B SHLD A159					.25 .25				
A 159W			P1-D24 P3-B3					.15 .19			7, 18 4	
A 160	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 160B	2		E13-B SHLD A160					.25 .25				
A 160W			P1-D25 P3-B4					.15 .19			7, 18 4	
A 161	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 161B	2		E13-B SHLD A161					.25 .25				
A 161W			P1-F16 P3-B5					.15 .19			7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080		
SCALE-NONE	REV LTR	~~D~~E	SHEET 44 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 162	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 162B	2		E13-B SHLD A162					.25 .25				
A 162W			P1-F17 P3-B6					.15 .19			7, 18 4	
A 163	1				5.75 5.75	5.50 5.50				8,7 A,6A	9 8, 9	
A 163B	2		E13-B SHLD A163					.25 .25				
A 163W			P1-F18 P3-B7					.15 .19			7, 18 4	
A 164	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 164B	2		E13-B SHLD A164					.25 .25	NO NO			
A 164W			P1-F19 P3-B8					.15 .19	NO NO		7, 18 4	
A 165	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 165B	2		E13-B SHLD A165					.25 .25	NO NO			
A 165W			P1-F20 P3-C1					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080		
SCALE-NONE	REV LTR	~~D~~E	SHEET 45 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 166	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 166B	2		E14-B SHLD A166					.25 .25	NO NO			
A 166W			P1-F21 P3-C2					.15 .19	NO NO		7, 18 4	
A 167	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 167B	2		E14-B SHLD A167					.25 .25	NO NO			
A 167W			P1-F22 P3-C3					.15 .19	NO NO		7, 18 4	
A 168	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 168B	2		E14-B SHLD A168					.25 .25	NO NO			
A 168W			P1-F23 P3-C4					.15 .19	NO NO		7, 18 4	
A 169	1				7.25 6.25	7.00 6.00				8,7 A,6A	9 8, 9	
A 169B	2		E14-B SHLD A169					.25 .25	NO NO			
A 169W			P1-F24 P3-C5					.15 .19	NO NO		7, 18 4	

SIZE A	CODE IDENT NO. 99974	6900080		
SCALE-NONE	REV LTR	~~D~~E	SHEET 46 OF 75	

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 170	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 170B	2		E14-B SHLD A170					.25 .25	NO NO			
A 170W			P1-F25 P3-C6					.15 .19	NO NO		7, 18 4	
A 171	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 171B	2		E14-B SHLD A171					.25 .25	NO NO			
A 171W			P1-G16 P3-C7					.15 .19	NO NO		7, 18 4	
A 172	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 172B	2		E14-B SHLD A172					.25 .25	NO NO			
A 172W			P1-G17 P3-C8					.15 .19	NO NO		7, 18 4	
A 173	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 173B	2		E14-B SHLD A173					.25 .25	NO NO			
A 173W			P1-G18 P3-D1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 47 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 174	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 174B	2		E14-B SHLD A174					.25 .25	NO NO			
A 174W			P1-G19 P3-D2					.15 .19	NO NO		7, 18 4	
A 175	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 175B	2		E14-B SHLD A175					.25 .25	NO NO			
A 175W			P1-G20 P3-D3					.15 .19	NO NO		7, 18 4	
A 176	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 176B	2		E14-B SHLD A176					.25 .25	NO NO			
A 176W			P1-G21 P3-D4					.15 .19	NO NO		7, 18 4	
A 177	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 177B	2		E14-B SHLD A177					.25 .25	NO NO			
A 177W			P1-G22 P3-D5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 48 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 178	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 178B	2		E15-B SHLD A178					.25 .25	NO NO			
A 178W			P1-G23 P3-D6					.15 .19	NO NO		7, 18 4	
A 179	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 179B	2		E15-B SHLD A179					.25 .25	NO NO			
A 179W			P1-G24 P3-D7					.15 .19	NO NO		7, 18 4	
A 180	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 180B	2		E15-B SHLD A180					.25 .25	NO NO			
A 180W			P1-G25 P3-D8					.15 .19	NO NO		7, 18 4	
A 181	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 181B	2		E15-B SHLD A181					.25 .25	NO NO			
A 181W			P1-H16 P3-F1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 49 OF 75

MIL 2084 9-65

CABLE W557 6900080 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 182	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 182B	2		E15-B SHLD A182					.25 .25	NO NO			
A 182W			P1-H17 P3-F2					.15 .19	NO NO		7, 18 4	
A 183	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 183B	2		E15-B SHLD A183					.25 .25	NO NO			
A 183W			P1-H18 P3-F3					.15 .19	NO NO		7, 18 4	
A 184	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 184B	2		E15-B SHLD A184					.25 .25	NO NO			
A 184W			P1-H19 P3-F4					.15 .19	NO NO		7, 18 4	
A 185	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 185B	2		E15-B SHLD A185					.25 .25	NO NO			
A 185W			P1-H20 P3-F5					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR G	SHEET 50 OF 75

MIL 2084 9-65

CABLE W557 6900080 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 186	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 186B	2		E15-B SHLD A186					.25 .25	NO NO			
A 186W			P1-H21 P3-F6					.15 .19	NO NO		7, 18 4	
A 187	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 187B	2		E15-B SHLD A187					.25 .25	NO NO			
A 187W			P1-H22 P3-F7					.15 .19	NO NO		7, 18 4	
A 188	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 188B	2		E15-B SHLD A188					.25 .25	NO NO			
A 188W			P1-H23 P3-F8					.15 .19	NO NO		7, 18 4	
A 189	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 189B	2		E15-B SHLD A189					.25 .25	NO NO			
A 189W			P1-H24 P3-G1					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR G	SHEET 51 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 190	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 190B	2		E16-B SHLD A190					.25 .25	NO NO			
A 190W			P1-H25 P3-G2					.15 .19	NO NO		7, 18 4	
A 196	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 196B	2		E16-B SHLD A196					.25 .25	NO NO			
A 196W			P1-K21 P3-G8					.15 .19	NO NO		7, 18 4	
A 197	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 197B	2		E16-B SHLD A197					.25 .25	NO NO			
A 197W			P1-K22 P3-H1					.15 .19	NO NO		7, 18 4	
A 198	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 198B	2		E16-B SHLD A198					.25 .25	NO NO			
A 198W			P1-K23 P3-H2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 52 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 199B	2		E16-B SHLD A199					.25 .25	NO NO			
A 199W			P1-K24 P3-H3					.15 .19	NO NO		7, 18 4	
A 200	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 200B	2		E16-B SHLD A200					.25 .25	NO NO			
A 200W			P1-K25 P3-H4					.15 .19	NO NO		7, 18 4	
A 201	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 201B	2		E16-B SHLD A201					.25 .25	NO NO			
A 201W			P1-A26 P3-H5					.15 .19	NO NO		7, 18 4	
A 202	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 202B	2		E16-B SHLD A202					.25 .25	NO NO			
A 202W			P1-A27 P3-H6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 53 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~B~~ E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 203	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 203B	2		E16-B SHLD A203					.25 .25	NO NO			
A 203W			P1-A28 P3-H7					.15 .19	NO NO		7, 18 4	
A 204	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 204B	2		E16-B SHLD A204					.25 .25	NO NO			
A 204W			P1-A29 P3-H8					.15 .19	NO NO		7, 18 4	
A 205	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 205B	2		E16-B SHLD A205					.25 .25	NO NO			
A 205W			P1-A30 P3-J1					.15 .19	NO NO		7, 18 4	
A 206	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 206B	2		E16-B SHLD A206					.25 .25	NO NO			
A 206W			P1-A31 P3-J2					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR ~~B~~ E	SHEET 54 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 207	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 207B	2		E17-B SHLD A207					.25 .25	NO NO			
A 207W			P1-A32 P3-J3					.15 .19	NO NO		7, 18 4	
A 208	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 208B	2		E17-B SHLD A208					.25 .25	NO NO			
A 208W			P1-A33 P3-J4					.15 .19	NO NO		7, 18 4	
A 211	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 211B	2		E17-B SHLD A211					.25 .25	NO NO			
A 211W			P1-B26 P3-J7					.15 .19	NO NO		7, 18 4	
A 212	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 212B	2		E17-B SHLD A212					.25 .25	NO NO			
A 212W			P1-B27 P3-J8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 55 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 213	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 213B	2		E17-B SHLD A213					.25 .25	NO NO			
A 213W			P1-B28 P3-K1					.15 .19	NO NO		7, 18 4	
A 214	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 214B	2		E17-B SHLD A214					.25 .25	NO NO			
A 214W			P1-B29 P3-K2					.15 .19	NO NO		7, 18 4	
A 215	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 215B	2		E17-B SHLD A215					.25 .25	NO NO			
A 215W			P1-B30 P3-K3					.15 .19	NO NO		7, 18 4	
A 216	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 216B	2		E17-B SHLD A216					.25 .25	NO NO			
A 216W			P1-B31 P3-K6					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 56 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 217	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 217B	2		E17-B SHLD A217					.25 .25	NO NO			
A 217W			P1-B32 P3-K7					.15 .19	NO NO		7, 18 4	
A 218	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 218B	2		E17-B SHLD A218					.25 .25	NO NO			
A 218W			P1-B33 P3-K8					.15 .19	NO NO		7, 18 4	
A 219	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 219B	2		E17-B SHLD A219					.25 .25	NO NO			
A 219W			P1-B34 P3-L1					.15 .19	NO NO		7, 18 4	
A 220	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 220B	2		E17-B SHLD A220					.25 .25				
A 220W			P1-B35 P3-L2					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 57 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 221	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 221B	2		E18-B SHLD A221					.25 .25				
A 221W			P1-C26 P3-L7					.15 .19			7, 18 4	
A 222	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 222B	2		E18-B SHLD A222					.25 .25				
A 222W			P1-C27 P3-L8					.15 .19			7, 18 4	
A 223	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 223B	2		E18-B SHLD A223					.25 .25				
A 223W			P1-C28 P3-M1					.15 .19			7, 18 4	
A 224	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 224B	2		E18-B SHLD A224					.25 .25				
A 224W			P1-C29 P3-M2					.15 .19			7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 58 OF 75

MIL 2084 9-65

CABLE W557 6900080 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 225	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 225B	2		E18-B SHLD A225					.25 .25				
A 225W			P1-C30 P3-M3					.15 .19			7, 18 4	
A 226	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 226B	2		E18-B SHLD A226					.25 .25				
A 226W			P1-C31 P3-M6					.15 .19			7, 18 4	
A 227	1				5.75 5.75	5.50 5.50				B,7 A,6A	9 8, 9	
A 227B	2		E18-B SHLD A227					.25 .25				
A 227W			P1-C32 P3-M7					.15 .19			7, 18 4	
A 228	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 228B	2		E18-B SHLD A228					.25 .25	NO NO			
A 228W			P1-C33 P3-M8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR G | SHEET 59 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 229	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 229B	2		E18-B SHLD A229					.25 .25	NO NO			
A 229W			P1-C34 P3-N1					.15 .19	NO NO		7, 18 4	
A 230	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 230B	2		E18-B SHLD A230					.25 .25	NO NO			
A 230W			P1-C35 P3-N2					.15 .19	NO NO		7, 18 4	
A 231	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 231B	2		E18-B SHLD A231					.25 .25	NO NO			
A 231W			P1-D26 P3-N3					.15 .19	NO NO		7, 18 4	
A 232	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 232B	2		E18-B SHLD A232					.25 .25	NO NO			
A 232W			P1-D27 P3-N4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 60 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 233	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 233B	2		E19-B SHLD A233					.25 .25	NO NO			
A 233W			P1-D28 P3-N5					.15 .19	NO NO		7, 18 4	
A 234	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 234B	2		E19-B SHLD A234					.25 .25	NO NO			
A 234W			P1-D29 P3-N6					.15 .19	NO NO		7, 18 4	
A 235	1				7.25 6.25	7.00 6.00				B,7 A,6A	9 8, 9	
A 235B	2		E19-B SHLD A235					.25 .25	NO NO			
A 235W			P1-D30 P3-N7					.15 .19	NO NO		7, 18 4	
A 236	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 236B	2		E19-B SHLD A236					.25 .25	NO NO			
A 236W			P1-D31 P3-N8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 61 OF 75

MIL 2084 9-65

CABLE W557 6900080 ~~D~~E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 237	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 237B	2		E19-B SHLD A237					.25 .25	NO NO			
A 237W			P1-D32 P3-P1					.15 .19	NO NO		7, 18 4	
A 238	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 238B	2		E19-B SHLD A238					.25 .25	NO NO			
A 238W			P1-D33 P3-P2					.15 .19	NO NO		7, 18 4	
A 239	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 239B	2		E19-B SHLD A239					.25 .25	NO NO			
A 239W			P1-D34 P3-P3					.15 .19	NO NO		7, 18 4	
A 240	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 240B	2		E19-B SHLD A240					.25 .25	NO NO			
A 240W			P1-D35 P3-P4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR ~~D~~E | SHEET 62 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 241	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 241B	2		E19-B SHLD A241					.25 .25	NO NO			
A 241W			P1-F26 P3-P5					.15 .19	NO NO		7, 18 4	
A 242	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 242B	2		E19-B SHLD A242					.25 .25	NO NO			
A 242W			P1-F27 P3-P6					.15 .19	NO NO		7, 18 4	
A 243	1				7.75 6.75	7.50 6.50				B,7 A,6A	9 8, 9	
A 243B	2		E19-B SHLD A243					.25 .25	NO NO			
A 243W			P1-F28 P3-P7					.15 .19	NO NO		7, 18 4	
A 244	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 244B	2		E19-B SHLD A244					.25 .25	NO NO			
A 244W			P1-F29 P3-P8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 63 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 245	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 245B	2		E20-B SHLD A245					.25 .25	NO NO			
A 245W			P1-F30 P3-R1					.15 .19	NO NO		7, 18 4	
A 246	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 246B	2		E20-B SHLD A246					.25 .25	NO NO			
A 246W			P1-F31 P3-R2					.15 .19	NO NO		7, 18 4	
A 247	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 247B	2		E20-B SHLD A247					.25 .25	NO NO			
A 247W			P1-F32 P3-R3					.15 .19	NO NO		7, 18 4	
A 248	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 248B	2		E20-B SHLD A248					.25 .25	NO NO			
A 248W			P1-F33 P3-R4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 64 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 249	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 249B	2		E20-B SHLD A249					.25 .25	NO NO			
A 249W			P1-F34 P3-R5					.15 .19	NO NO		7, 18 4	
A 250	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 250B	2		E20-B SHLD A250					.25 .25	NO NO			
A 250W			P1-F35 P3-R6					.15 .19	NO NO		7, 18 4	
A 251	1				6.25 3.25	6.00 3.00				B,7 A,6A	9 8, 9	
A 251B	2		E20-B SHLD A251					.25 .25	NO NO			
A 251W			P1-G26 P3-R7					.15 .19	NO NO		7, 18 4	
A 252	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 252B	2		E20-B SHLD A252					.25 .25	NO NO			
A 252W			P1-G27 P3-R8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 65 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 253	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 253B	2		E20-B SHLD A253					.25 .25	NO NO			
A 253W			P1-G28 P3-S1					.15 .19	NO NO		7, 18 4	
A 254	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 254B	2		E20-B SHLD A254					.25 .25	NO NO			
A 254W			P1-G29 P3-S2					.15 .19	NO NO		7, 18 4	
A 255	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 255B	2		E20-B SHLD A255					.25 .25	NO NO			
A 255W			P1-G30 P3-S3					.15 .19	NO NO		7, 18 4	
A 256	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 256B	2		E20-B SHLD A256					.25 .25	NO NO			
A 256W			P1-G31 P3-S4					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.	
A	99974	6900080
SCALE-NONE	REV LTR E	SHEET 66 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 257	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 257B	2		E21-B SHLD A257					.25 .25	NO NO			
A 257W			P1-G32 P3-S5					.15 .19	NO NO		7, 18 4	
A 258	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 258B	2		E21-B SHLD A258					.25 .25	NO NO			
A 258W			P1-G33 P3-S6					.15 .19	NO NO		7, 18 4	
A 259	1				6.75 3.75	6.50 3.50				B,7 A,6A	9 8, 9	
A 259B	2		E21-B SHLD A259					.25 .25	NO NO			
A 259W			P1-G34 P3-S7					.15 .19	NO NO		7, 18 4	
A 260	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 260B	2		E21-B SHLD A260					.25 .25	NO NO			
A 260W			P1-G35 P3-S8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 67 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 261	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 261B	2		E21-B SHLD A261					.25 .25	NO NO			
A 261W			P1-H26 P3-T1					.15 .19	NO NO		7, 18 4	
A 262	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 262B	2		E21-B SHLD A262					.25 .25	NO NO			
A 262W			P1-H27 P3-T2					.15 .19	NO NO		7, 18 4	
A 263	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 263B	2		E21-B SHLD A263					.25 .25	NO NO			
A 263W			P1-H28 P3-T3					.15 .19	NO NO		7, 18 4	
A 264	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 264B	2		E21-B SHLD A264					.25 .25	NO NO			
A 264W			P1-H29 P3-T4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 68 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 265	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 265B	2		E21-B SHLD A265					.25 .25	NO NO			
A 265W			P1-H30 P3-T5					.15 .19	NO NO		7, 18 4	
A 266	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 266B	2		E21-B SHLD A266					.25 .25	NO NO			
A 266W			P1-H31 P3-T6					.15 .19	NO NO		7, 18 4	
A 267	1				4.25 4.25	4.00 4.00				B,7 A,6A	9 8, 9	
A 267B	2		E21-B SHLD A267					.25 .25	NO NO			
A 267W			P1-H32 P3-T7					.15 .19	NO NO		7, 18 4	
A 268	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 268B	2		E21-B SHLD A268					.25 .25	NO NO			
A 268W			P1-H33 P3-T8					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 69 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 269	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 269B	2		E22-B SHLD A269					.25 .25	NO NO			
A 269W			P1-H34 P3-U1					.15 .19	NO NO		7, 18 4	
A 270	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 270B	2		E22-B SHLD A270					.25 .25	NO NO			
A 270W			P1-H35 P3-U2					.15 .19	NO NO		7, 18 4	
A 271	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 271B	2		E22-B SHLD A271					.25 .25	NO NO			
A 271W			P1-K26 P3-U3					.15 .19	NO NO		7, 18 4	
A 272	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 272B	2		E22-B SHLD A272					.25 .25	NO NO			
A 272W			P1-K27 P3-U4					.15 .19	NO NO		7, 18 4	

SIZE A | CODE IDENT NO. 99974 | 6900080

SCALE-NONE | REV LTR E | SHEET 70 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 273	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 273B	2		E22-B SHLD A273					.25 .25	NO NO			
A 273W			P1-K28 P3-U5					.15 .19	NO NO		7, 18 4	
A 274	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 274B	2		E22-B SHLD A274					.25 .25	NO NO			
A 274W			P1-K29 P3-U6					.15 .19	NO NO		7, 18 4	
A 275	1				4.75 4.75	4.50 4.50				B,7 A,6A	9 8, 9	
A 275B	2		E22-B SHLD A275					.25 .25	NO NO			
A 275W			P1-K30 P3-U7					.15 .19	NO NO		7, 18 4	
A 276	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 276B	2		E22-B SHLD A276					.25 .25	NO NO			
A 276W			P1-K31 P3-U8					.15 .19	NO NO		7, 18 4	

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 71 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 277	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 277B	2		E22-B SHLD A277					.25 .25	NO NO			
A 277W			P1-K32 P3-V1					.15 .19	NO NO		7, 18 4	
A 278	1				5.25 5.25	5.00 5.00				B,7 A,6A	9 8, 9	
A 278B	2		E22-B SHLD A278					.25 .25	NO NO			
A 278W			P1-K33 P3-V2					.15 .19	NO NO		7, 18 4	
A 279	6		E1-BB E23-B					.25 .25	NO NO			
A 280	6		E2-BB E23-B					.25 .25	NO NO			
A 281	6		E3-BB E23-B					.25 .25	NO NO			
A 282	6		E4-BB E23-B					.25 .25	NO NO			
A 283	6		E5-BB E23-B					.25 .25	NO NO			
A 284	6		E6-BB E23-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 72 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 285	6		E7-BB E23-B					.25 .25	NO NO			
A 286	6		E8-BB E23-B					.25 .25	NO NO			
A 287	6		E9-BB E23-B					.25 .25	NO NO			
A 288	6		E10-BB E23-B					.25 .25	NO NO			
A 289	6		E11-BB E23-B					.25 .25	NO NO			
A 290	6		E12-BB E23-B					.25 .25	NO NO			
A 291	6		E13-BB E24-B					.25 .25	NO NO			
A 292	6		E14-BB E24-B					.25 .25	NO NO			
A 293	6		E15-BB E24-B					.25 .25	NO NO			
A 294	6		E16-BB E24-B					.25 .25	NO NO			
A 295	6		E17-BB E24-B					.25 .25	NO NO			
A 296	6		E18-BB E24-B					.25 .25	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 73 OF 75

MIL 2084 9-65

CABLE W557 6900080 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 297	6		E19-BB E24-B					.25 .25	NO NO			
A 298	6		E20-BB E24-B					.25 .25	NO NO			
A 299	6		E21-BB E24-B					.25 .25	NO NO			
A 300	6		E22-BB E24-B					.25 .25	NO NO			
A 301	5		E23-BB P2-X6					.19 .19	NO NO		 25	
A 302	5		E24-BB P3-X6					.19 .19	NO NO		 25	

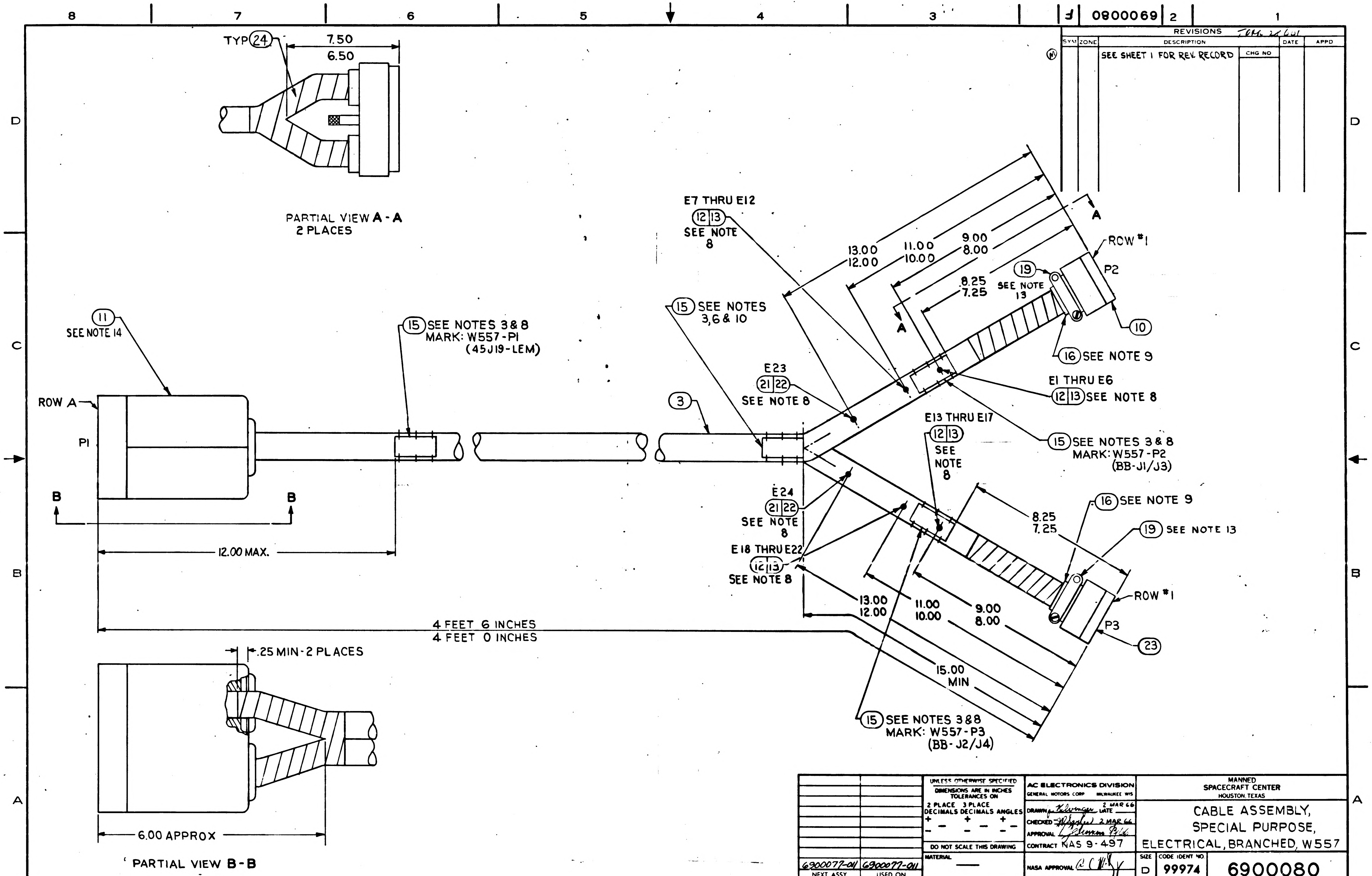
SIZE	CODE IDENT NO.		
A	99974	6900080	
SCALE-NONE	REV LTR E		SHEET 74 OF 75

MIL 2084 9-65

F	0800069	2

REVISIONS *TDM 22601*

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
Ⓜ		SEE SHEET 1 FOR REV. RECORD			



TYP (24)
7.50
6.50
PARTIAL VIEW A - A
2 PLACES
(11) SEE NOTE 14
ROW A
P1
B
B
12.00 MAX.
(15) SEE NOTES 3&8
MARK: W557-P1
(45J19-LEM)
(3)
(15) SEE NOTES 3,6 & 10
E7 THRU E12
(12)(13) SEE NOTE 8
E23
(21)(22) SEE NOTE 8
13.00
12.00
11.00
10.00
9.00
8.00
8.25
7.25
(19) SEE NOTE 13
A
A
ROW #1
P2
(10)
(16) SEE NOTE 9
E1 THRU E6
(12)(13) SEE NOTE 8
(15) SEE NOTES 3 & 8
MARK: W557-P2
(BB-J1/J3)
E13 THRU E17
(12)(13) SEE NOTE 8
E24
(21)(22) SEE NOTE 8
E18 THRU E22
(12)(13) SEE NOTE 8
8.25
7.25
(16) SEE NOTE 9
(19) SEE NOTE 13
ROW #1
P3
(23)
13.00
12.00
11.00
10.00
9.00
8.00
15.00 MIN
(15) SEE NOTES 3&8
MARK: W557-P3
(BB-J2/J4)
4 FEET 6 INCHES
4 FEET 0 INCHES
.25 MIN-2 PLACES
6.00 APPROX
PARTIAL VIEW B-B

6900077-011	*6900077-011*
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± – 3 PLACE DECIMALS ± – ANGLES ± –

DO NOT SCALE THIS DRAWING

MATERIAL —

APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS

DRAWN *Klonger* DATE 2 MAR 66
CHECKED *2 MAR 66*
APPROVAL
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL *5-10-66*

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED, W557

SIZE D
CODE IDENT NO. 99974
6900080
SCALE NONE
SHEET 75 OF 75

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900077-011	6900077-011	A	REPLACES REV (+) WITH CHANGE PER MXC 208484	24 JAN 66	RLP mem
		B	REVISED PER MXC 209890	10 MAR 66	RLP
		C	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	JHP EF

REV STATUS OF SHEETS											
REV	C	C	C	C	C	C	C	C	C	C	C
SHEET	1	2	3	4	5	6	7	8	9	10	11

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Janowiak DATE 10 DEC 65
CHECKED Moyce 13 DEC 65
APPROVAL F Reed 13 Dec 65
APPROVAL Gedman 5/3/66

NASA APPROVAL
MIT APPROVAL 5-10-66

CONTRACT NAS 9-497

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W528

CODE IDENT NO.	SIZE		REV
99974	A	6900081	C
SCALE –		SHEET 1 OF 11	

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES.
5	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019.
6	ASSEMBLE PER ND1002032.
7	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
8	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER - A - FROM END SHIELD B - TO END SHIELD W - WHITE
9	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 17 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
10	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 18.
11	SERIALIZE PER ND1002032.
12	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 2 OF 11

NOTE NUMBER	GENERAL NOTES DESCRIPTION
13	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED , .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND1002019. CENTRALIZE.
14	AT ASSEMBLY OF ITEM 5 TO ITEM 20, REMOVE 4 SELF LOCKING NUTS SECURING LOCATING PINS TO ITEM 5 AND DISCARD. ATTACH ITEM 5 TO ITEM 20 USING LOCATING PINS.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 3 OF 11

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900081-001	WIRE ND1002181 TYPE 1 CLASS 4 22AWG WHT JKT WHT. 76 FT TOTAL LENGTH
	2	1	6900081-002	WIRE ND1002181 TYPE 1 CLASS 1 24AWG WHT 9.5 FT. TOTAL LENGTH
	3	1	6900081-003	ZIPPER TUBING PER ND1002155 TYPE 1 GREY 1 DIA 4 FT TOTAL LENGTH
7	4	19	1016369-421	CONTACT, SOCKET
7	5	1	1897336-001	CONNECTOR
7	6	1	1897250-013	CONNECTOR
7	7	X	1897190-001	CONTACT,PIN (FURNISHED WITH ITEM 6)
7	8	19	1010763-002	SOLDER SLEEVE
7	9	38	1010490-232	INSULATION SLEEVING SHRINK FIT
7	10	3	1016006-002	SPLICE REDUCER
7	11	3	1010490-258	INSULATION SLEEVING SHRINK FIT
	12		1015902-003	DELETED
	13	1	6900081-004	WIRE ND1002181 TYPE 1 CLASS 1 20AWG WHT 1 FT TOTAL LENGTH
	14	1	6900081-005	WIRE ND1002181 TYPE 1 CLASS 1 16AWG WHT 1 FT TOTAL LENGTH
7	15	3	1016128-021	BAND IDENTIFICATION
7	16	1	1010933-101	CLAMP, CABLE

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 4 OF 11

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	AR	MIL-I-631	FILLER TAPE, TYPE F, FORM T, GRADE A, CLASS 1, BLACK, .62 INCH WIDE, .020 INCH THICK
	18	AR	MIL-T-713B,TYPE P, CLASS 2, BLACK	LACING TAPE
	19		1010490-166	DELETED
7	20	1	1897391	CLAMP, CABLE
	21	1	1016369-721	CONTACT, SOCKET

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 5 OF 11

CABLE ASSEMBLY W528 6900081 C B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1			2.25 6.25	2.00 6.00				B,7 A,6A	9 8, 9	
A	1B	2	E1-B SHLD A1					.25 .25	NO NO			
A	1W		P1-1 P2-A3					.15 .19	NO NO		7 4	
A	2	1			2.25 6.25	2.C0 6.00				B,7 A,6A	9 8, 9	
A	2B	2	E1-B SHLD A2					.25 .25	NO NO			
A	2W		P1-2 P2-A4					.15 .19	NO NO		7 4	
A	3	1			2.25 6.25	2.00 6.00				B,7 A,6A	9 8, 9	
A	3B	2	E1-B SHLD A3					.25 .25	NO NO			
A	3W		P1-3 P2-A5					.15 .19	NO NU		7 4	
A	4	1			2.25 6.25	2.0C 6.00				B,7 A,6A	9 8, 9	
A	4B	2	E1-B SHLD A4					.25 .25	NO NO			
A	4W		P1-4 P2-A6					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 6 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W528 6900081 C B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	5	1			2.25 6.25	2.00 6.00				B,7 A,6A	9 8, 9	
A	5B	2	E1-B SHLD A5					.25 .25	NO NO			
A	5W		P1-5 P2-B1					.15 .19	NO NO		7 4	
A	6	1			2.25 6.25	2.00 6.00				B,7 A,6A	9 8, 9	
A	6B	2	E1-B SHLD A6					.25 .25	NO NO			
A	6W		P1-6 P2-B2					.15 .19	NO NO		7 4	
A	7	1			2.25 6.25	2.00 6.00				B,7 A,6A	9 8, 9	
A	7B	2	E1-B SHLD A7					.25 .25	NO NO			
A	7W		P1-7 P2-B3					.15 .19	NO NO		7 4	
A	8	1			2.25 6.25	2.00 6.00				B,7 A,6A	9 8, 9	
A	8B	2	E1-B SHLD A8					.25 .25	NO NO			
A	8W		P1-8 P2-B4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 7 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W528 6900081 C B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	9	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	9B	2	E1-B SHLD A9					.25 .25	NO NO			
A	9W		P1-9 P2-B5					.15 .19	NO NO		7 4	
A	10	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	10B	2	E1-B SHLD A10					.25 .25	NO NO			
A	10W		P1-10 P2-B6					.15 .19	NO NO		7 4	
A	11	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	11B	2	E2-B SHLD A11					.25 .25	NO NO			
A	11W		P1-11 P2-B7					.15 .19	NO NO		7 4	
A	12	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	12B	2	E2-B SHLD A12					.25 .25	NO NO			
A	12W		P1-12 P2-B8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 8 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W528 6900081 C B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	13	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	13B	2	E2-B SHLD A13					.25 .25	NO NO			
A	13W		P1-13 P2-C1					.15 .19	NO NO		7 4	
A	14	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	14B	2	E2-B SHLD A14					.25 .25	NO NO			
A	14W		P1-14 P2-C2					.15 .19	NO NO		7 4	
A	15	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	15B	2	E2-B SHLD A15					.25 .25	NO NU			
A	15W		P1-15 P2-C3					.15 .19	NO NO		7 4	
A	16	1			2.75 6.75	2.50 6.50				B,7 A,6A	9 8, 9	
A	16B	2	E2-B SHLD A16					.25 .25	NO NO			
A	16W		P1-16 P2-C4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR B C	SHEET 9 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W528 6900081 C ~~B~~

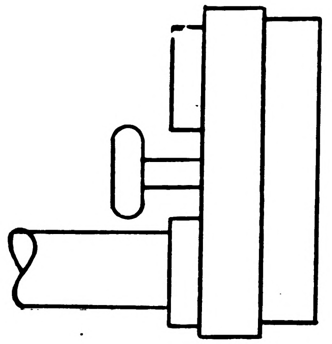
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17	1				3.25 3.25	3.00 3.00				B,7 A,6A	9 8, 9	
A 17B	2		E2-B SHLD A17					.25 .25	NO NO			
A 17W			P1-17 P2-C5					.15 .19	NO NO		7 4	
A 18	1				3.25 3.25	3.00 3.00				B,7 A,6A	9 8, 9	
A 18B	2		E2-B SHLD A18					.25 .25				
A 18W			P1-18 P2-C6					.15 .19			7 4	
A 19	1				3.25 3.25	3.00 3.00				B,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-19 P2-C7					.15 .19	NO NO		7 4	
A 21	13		F1-BB E3-B					.25 .25	NO NO			
A 22	13		E2-BB E3-B					.25 .25	NO NO			
A 23	14		E3-BB P2-X6					.25 .19	NO NO		21	

SIZE	CODE IDENT NO.	
A	99974	6900081
SCALE-NONE	REV LTR ~~B~~ C	SHEET 10 OF 11

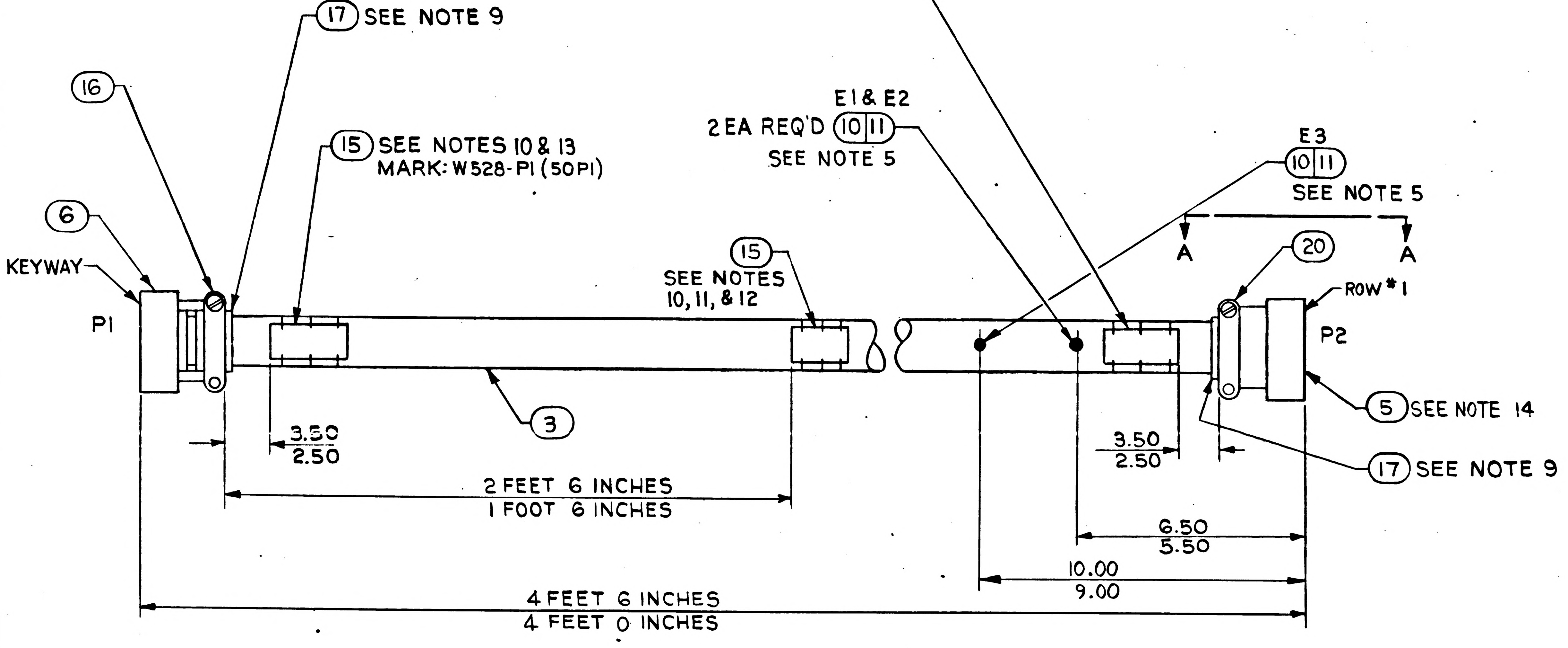
MIL 2084 9-65

REVISIONS TDRA 28601

ZONE	LTR	DESCRIPTION		DATE	APPROVED
		SEE SHEET 1 FOR REV. RECORD	CHG. NO.		



PARTIAL VIEW A-A


17 SEE NOTE 9
16
15 SEE NOTES 10 & 13
MARK: W528-P1 (50P1)
6
KEYWAY
P1
15 SEE NOTES 10, 11, & 12
3
3.50
2.50
2 FEET 6 INCHES
1 FOOT 6 INCHES
4 FEET 6 INCHES
4 FEET 0 INCHES
E1 & E2
2 EA REQ'D 10 11
SEE NOTE 5
15 SEE NOTES 10 & 13
MARK: W528-P2(BB-J1/J3)
E3
10 11
SEE NOTE 5
A
A
20
ROW # 1
P2
5 SEE NOTE 14
17 SEE NOTE 9
3.50
2.50
6.50
5.50
10.00
9.00

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS + − − 3 PLACE DECIMALS + − − ANGLES + − −	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS. DRAWN Janowiak DATE 10 DEC 65 CHECKED Noye 13 DEC 65 APPROVAL L Goldman 5/3/66 CONTRACT NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W 528
DO NOT SCALE THIS DRAWING MATERIAL APPROVAL	NASA APPROVAL MIT APPROVAL 5-10-66	SIZE C CODE IDENT NO. 99974 6900081 SCALE NONE SHEET 11 OF 11

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACES REVISION (4) PER MXC 208405	21-JAN-66	MGM
B	REVISED PER MXC 209841	9 MAR 66	RLP
C	INITIAL RELEASE CLASS A PER TDRR 28601	3-MAY-66	EF

REV											
SHEET											
REV STATUS REV	C	C	C	C	C	C	C	C	C	C	C
OF SHEETS SHEET	1	2	3	4	5	6	7	8	9	10	11

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN DATE 13 DEC 65
CHECKED 13-DEC 65
APPROVAL Read 13 Dec 65
APPROVAL 5/3/66

NASA APPROVAL
MIT APPROVAL 5-6-6.

CONTRACT NAS 9-497

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W529

CODE IDENT NO.	SIZE		REV
99974	A	6900082	C

SCALE —

SHEET 1 OF 11

NOTE NUMBER GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 LOCATE IDENTIFICATION SLEEVING ADJACENT TO SOLDER SLEEVES.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019.

6 ASSEMBLE PER ND1002032.

7 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

8 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - FROM END SHIELD
B - TO END SHIELD
W - WHITE

9 FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 17 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.

10 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 18.

11 SERIALIZE PER ND1002032.

12 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 2 OF 11

NOTE NUMBER GENERAL NOTES DESCRIPTION

13 MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED , .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND1002019. CENTRALIZE.

14 AT ASSEMBLY OF ITEM 5 TO ITEM 20, REMOVE 4 SELF LOCKING NUTS SECURING LOCATING PINS TO ITEM 5 AND DISCARD. ATTACH ITEM 5 TO ITEM 20 USING LOCATING PINS.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 3 OF 11

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900082-001	WIRE ND1002181 TYPE 1 CLASS 4 22AWG WHT JKT WHT 76 FT TOTAL LENGTH
	2	1	6900082-002	WIRE ND1002181 TYPE 1 CLASS 1 24AWG WHT 9.5 FT TOTAL LENGTH
	3	1	6900082-003	ZIPPER TUBING PER ND1002155 TYPE 1 GREY 1 DIA 4 FT TOTAL LENGTH
7	4	19	1016369-421	CONTACT,SOCKET
7	5	1	1897336-001	CONNECTOR
7	6	1	1897247-013	CONNECTOR
7	7	X	1897190-002	CONTACT,SOCKET
7	8	19	1010763-002	SOLDER SLEEVE
7	9	38	1010490-232	INSULATION SLEEVING SHRINK FIT
7	10	3	1016006-002	SPLICE REDUCER
7	11	3	1010490-258	INSULATION SLEEVING SHRINK FIT
	12		1015902-003	DELETED
	13	1	6900082-004	WIRE ND1002181 TYPE 1 CLASS 1 20AWG WHT 1 FT TOTAL LENGTH
	14	1	6900082-005	WIRE ND1002181 TYPE 1 CLASS 1 16AWG WHT 1 FT TOTAL LENGTH
7	15	3	1016128-021	BAND IDENTIFICATION
7	16	1	1010933-101	CLAMP, CABLE

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 4 OF 11

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	AR	MIL-I-631	FILLER TAPE, TYPE F, FORM I, GRADE A, CLASS 1, .62 INCH WIDE, .020 INCH THICK, BLACK.
	18	AR	MIL-T-713B	LACING TAPE, TYPE P, CLASS 2, BLACK ~~[illegible]~~
	19		1010490-166	DELETED
7	20	1	1897391	CLAMP, CABLE
7	21	1	1016369-721	CONTACT, SOCKET

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 5 OF 11

CABLE ASSEMBLY W529 6900082 C ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	1B	2	E1-B SHLD A1					.25 .25	NO NO			
A	1W		P1-1 P2-A3					.15 .19	NO NO		7 4	
A	2	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	2B	2	E1-B SHLD A2					.25 .25	NO NO			
A	2W		P1-2 P2-A4					.15 .19	NO NO		7 4	
A	3	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	3B	2	E1-B SHLD A3					.25 .25	NO NO			
A	3W		P1-3 P2-A5					.15 .19	NO NO		7 4	
A	4	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	4B	2	E1-B SHLD A4					.25 .25	NO NO			
A	4W		P1-4 P2-A6					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 6 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W529 6900082 C ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	5	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	5B	2	E1-B SHLD A5					.25 .25	NO NO			
A	5W		P1-5 P2-B1					.15 .19	NO NO		7 4	
A	6	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	6B	2	E1-B SHLD A6					.25 .25	NO NO			
A	6W		P1-6 P2-B2					.15 .19	NO NO		7 4	
A	7	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	7B	2	E1-B SHLD A7					.25 .25	NO NO			
A	7W		P1-7 P2-B3					.15 .19	NO NO		7 4	
A	8	1			2.25 6.25	2.00 6.00				8,7 A,6A	9 8, 9	
A	8B	2	E1-B SHLD A8					.25 .25	NO NO			
A	8W		P1-8 P2-B4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 7 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W529 6900082 C ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	9	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	9B	2	E1-B SHLD A9					.25 .25	NO NO			
A	9W		P1-9 P2-B5					.15 .19	NO NO		7 4	
A	10	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	10B	2	E1-B SHLD A10					.25 .25	NO NO			
A	10W		P1-10 P2-B6					.15 .19	NO NO		7 4	
A	11	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	11B	2	E2-B SHLD A11					.25 .25	NO NO			
A	11W		P1-11 P2-B7					.15 .19	NO NO		7 4	
A	12	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	12B	2	E2-B SHLD A12					.25 .25	NO NO			
A	12W		P1-12 P2-B8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 8 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W529 6900082 C ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	13	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	13B	2	E2-B SHLD A13					.25 .25	NO NO			
A	13W		P1-13 P2-C1					.15 .19	NO NO		7 4	
A	14	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	14B	2	E2-B SHLD A14					.25 .25	NO NO			
A	14W		P1-14 P2-C2					.15 .19	NO NO		7 4	
A	15	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	15B	2	E2-B SHLD A15					.25 .25	NO NO			
A	15W		P1-15 P2-C3					.15 .19	NO NO		7 4	
A	16	1			2.75 6.75	2.50 6.50				8,7 A,6A	9 8, 9	
A	16B	2	E2-B SHLD A16					.25 .25	NO NO			
A	16W		P1-16 P2-C4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 9 OF 11

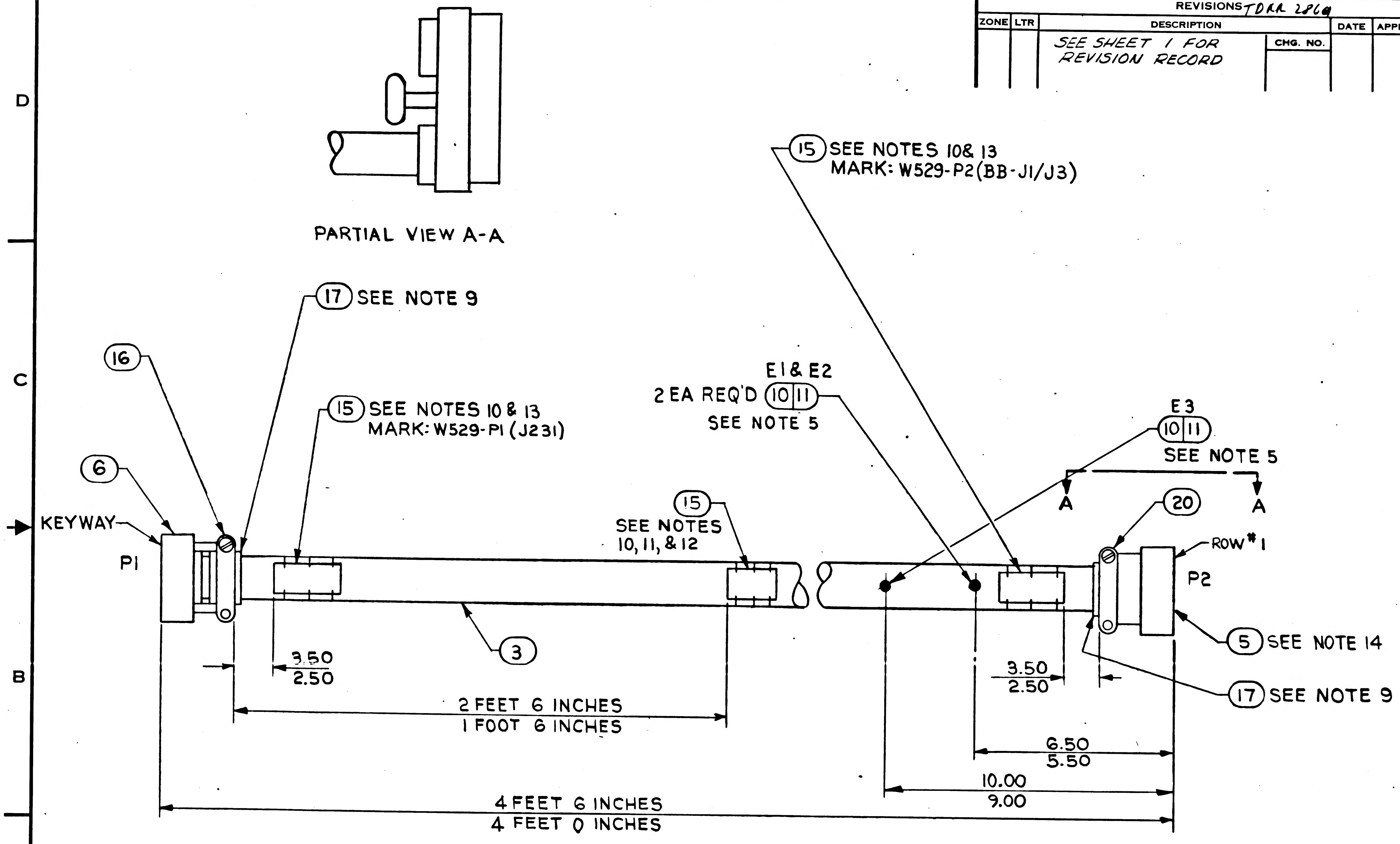
MIL 2084 9-65

CABLE ASSEMBLY W529 6900082 C~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 17	1				3.25 3.25	3.00 3.00				B,7 A,6A	9 8, 9	
A 17B	2		E2-B SHLD A17					.25 .25	NO NO			
A 17W			P1-17 P2-C5					.15 .19	NO NO		7 4	
A 18	1				3.25 3.25	3.00 3.00				B,7 A,6A	9 8, 9	
A 18B	2		E2-B SHLD A18					.25 .25				
A 18W			P1-18 P2-C6					.15 .19			7 4	
A 19	1				3.25 3.25	3.00 3.00				B,7 A,6A	9 8, 9	
A 19B	2		E2-B SHLD A19					.25 .25	NO NO			
A 19W			P1-19 P2-C7					.15 .19	NO NO		7 4	
A 21	13		E1-BB E3-B					.25 .25	NO NO			
A 22	13		E2-BB E3-B					.25 .25	NO NO			
A 23	14		E3-BB P2-X6					.25 .19	NO NO		21	

SIZE	CODE IDENT NO.	
A	99974	6900082
SCALE-NONE	REV LTR ~~B~~ C	SHEET 10 OF 11

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
		REVISIONS TDRR 2869			
		SEE SHEET 1 FOR REVISION RECORD			



4
3
2
1
D
C
B
A
PARTIAL VIEW A-A
(17) SEE NOTE 9
(16)
(6)
KEYWAY
P1
(15) SEE NOTES 10 & 13
MARK: W529-P1 (J231)
(15) SEE NOTES 10, 11, & 12
(3)
3.50
2.50
2 FEET 6 INCHES
1 FOOT 6 INCHES
4 FEET 6 INCHES
4 FEET 0 INCHES
(15) SEE NOTES 10& 13
MARK: W529-P2(BB-J1/J3)
E1 & E2
2 EA REQ'D (10|11)
SEE NOTE 5
E3
(10|11)
SEE NOTE 5
A
A
(20)
ROW # 1
P2
(5) SEE NOTE 14
(17) SEE NOTE 9
3.50
2.50
6.50
5.50
10.00
9.00

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Janowiak 13 DEC 65 DATE
CHECKED Molye 13-DEC 65
APPROVAL L Gedeman 5/3/66
CONTRACT NAS 9-497
NASA APPROVAL Q.C.
MIT APPROVAL W.C. Marks 5-10-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, W 529

SIZE C
CODE IDENT NO. 99974
6900082
SCALE NONE
SHEET 11 OF 11

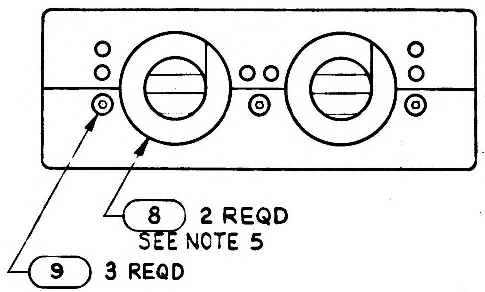
MIL-1062D D

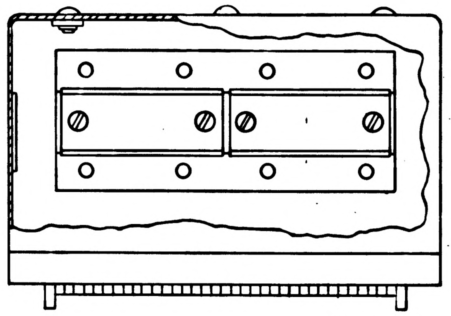
B 6900087

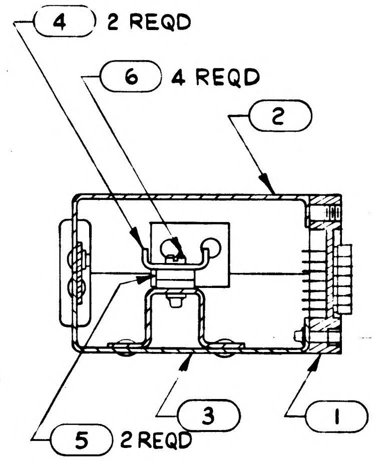
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. BOND ITEM (5) TO ITEM (4) PER ND1002151.
3. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
4. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES-267).
5. SPLIT ITEM (8) PER MS35489.

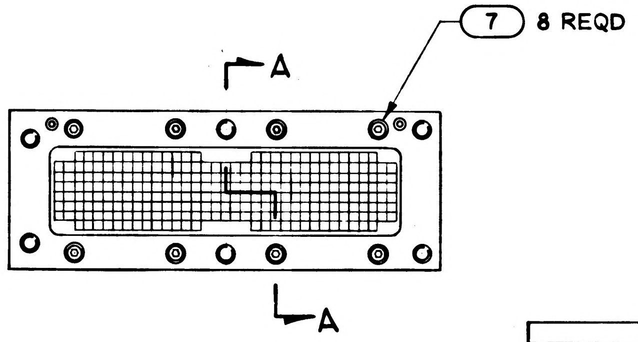
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER MXC 210068		17 MAR 66	J.H.P.
B		INITIAL RELEASE CLASS A PER TDRR 28601		3 MAY 66	RLP EF







SECTION A-A



SEE NOTE 3

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
3		9	1006783-19	SCREW, BUTTON HEAD
2		8	MS35489-20	GROMMET, RUBBER
8		7	1017418-11	SCREW, CAP, SOC. HD.
4		6	2901022-004	SCREW, SHOULDER
2		5	2900580-006	GASKET
2		4	2900711-006	CLAMP, MOVABLE
1		3	6900086	SHELL, CLAMP (INSEP ASSY)
1		2	6900085	SHELL, COVER (INSEP ASSY)
1		1	6900084	BASE, CONNECTOR

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900080	6900077-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES. TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ + +
- - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN J. Patterson DATE 20 JAN 66
CHECKED J. Stelma 24 JAN 66
APPROVAL R. Foss 26 JAN 66
APPROVAL E. Jedman 5/3/66
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONNECTOR, PLUG,
ELECTRICAL- 262 PIN

CODE IDENT NO. 99974
SIZE D
6900087
SCALE 1/1
SHEET 1 OF 1

25 JAN 66

MIL 1078D-P

APOLLO G&N Specification
PS6900088 REV G
Original Issue Date:
Release Authority: TDRR 28578
Class A Release
CODE IDENT NO. 99974

PROCUREMENT SPECIFICATION

PRODUCT CONFIGURATION AND ACCEPTANCE TEST REQUIREMENTS

PSA ADAPTER MODULE (LEM)

DRAWING NO. 6900088

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				AC	NASA
[illegible]	A	211389	3, 4, 8, 15, 19, & 23		
[illegible]	B	211821	22		
5/5/66	C		3, 4, 8		
5-5-66	D	28578	ALL INITIAL RELEASE		
[illegible]	E	30083	12, 19	MGM	ACM
6/3/66	F	30441	7	EA	MLB
3/17/67	G	33278	17	MGM EA	WLS

This specification consists of page 1 to 23 inclusive.

APPROVALS	NASA/MSC	5-5-66 9 May	MIT/IL	5-9	AC	R. Thomas

4.3.6 AC Amplifiers. Connections to the AC Amplifiers shall be in accordance with Tables VI and VII and Figure 4. The Power Switch shall be in the "ON" position.

4.3.6.1 Clipping. With the AC Amplifiers connected as recommended in Figure 4, and for amplifiers whose connections are specified in Table VI and the oscillator frequency at 800 cps ±1 percent or 3200 cps ±1 percent as specified, the oscillator output amplitudes shall be increased until clipping occurs and then decreased until clipping is no longer visible, the voltage at this point shall be greater than 5.5V rms. For the amplifiers whose connection are shown in Table VII, the testing shall be the same except the test shall be at 800 cps ±1 percent and the input level at which clipping is no longer visible shall be greater than 31V rms.

4.3.6.2 Gain. For amplifiers whose connections are shown in Table VI and as recommended in Figure 4, the oscillator output at 0.15, 0.35, 0.55, 0.75, 1.5, 2.5 and 5.0V rms ±1 percent 800 cps ±1 percent or 3200 cps ±1 percent as specified, the gain (E_{out}/E_{in}) shall be 0.99±0.01 volts/volt for each magnitude of oscillator output voltage. For the amplifiers whose connections are shown in Table VII, the testing shall be the same except the test shall be at 800 cps ±1 percent, the gain shall be 0.178 volt/volts ±1 percent with an input of 23V rms ±1 percent. Read and record all gain values to a minimum of 3 significant places to the right of the decimal point.

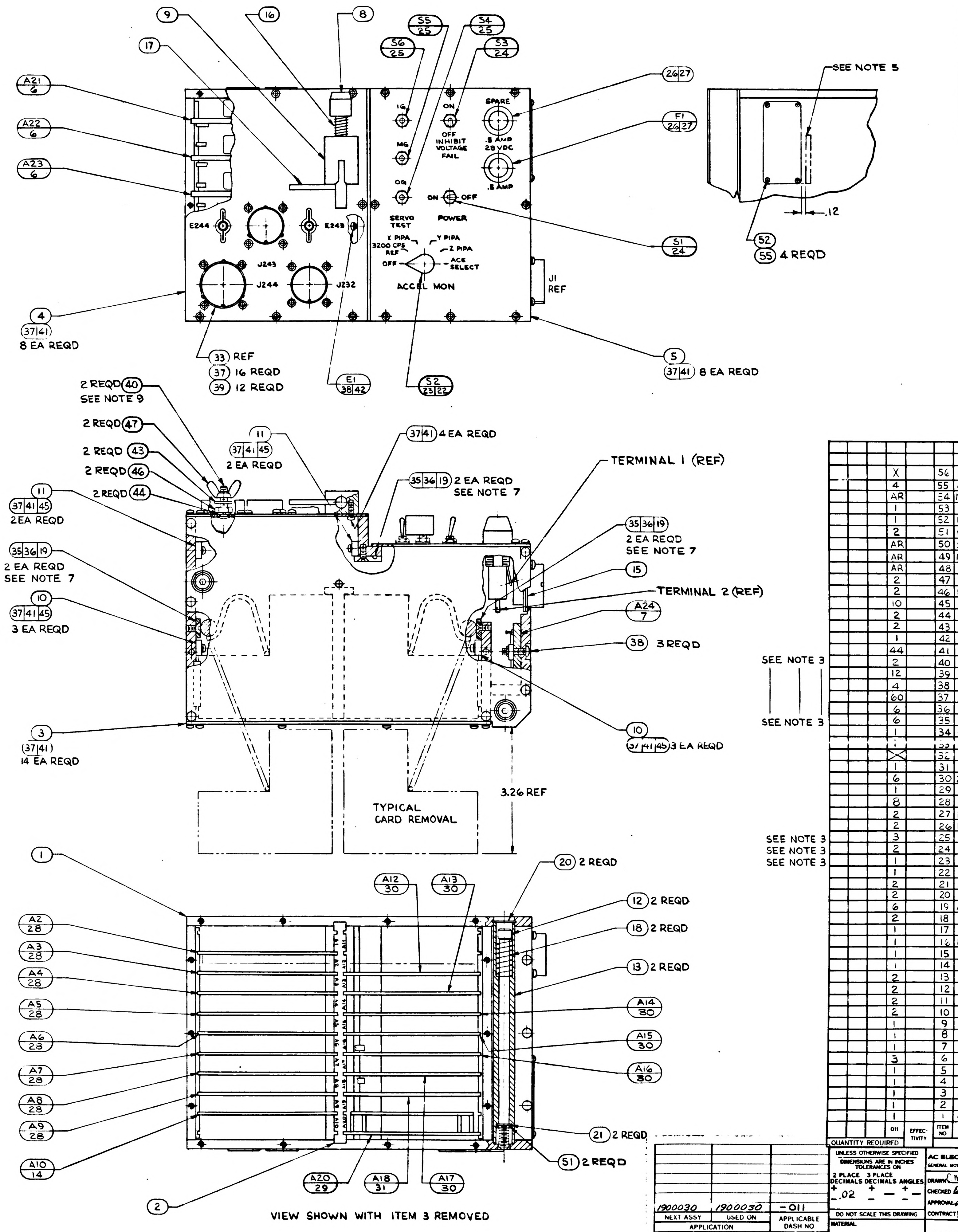
TABLE VI

AC AMPLIFIERS

	INPUT		OUTPUT		
FREQUENCY CPS ±1%	LO	HI	LO	HI	R_S (ohms ±1%)
3200	J1-55	J1-81	J244-37	J244-36	20K
3200	J1-55	J1-56	J244-41	J244-40	20K
3200	J1-55	J1-80	J244-45	J244-44	20K
800	J1-8	J1-2	J244-49	J244-48	20K
800	J1-8	J1-7	J244-51	J244-50	20K
800	J1-8	J1-19	J244-53	J244-52	20K
800	J1-8	J1-20	J244-55	J244-54	20K
800	J1-8	J1-39	J244-57	J244-56	20K
800	J1-8	J1-38	J244-59	J244-58	20K
800	J1-8	J1-37	J244-63	J244-62	20K
800	J1-8	J1-61	J244-65	J244-64	20K
800	J1-8	J1-62	J244-67	J244-66	20K
800	J1-8	J1-63	J244-69	J244-68	20K

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. SOLDER PER ND1002071 USING ITEMS 49 AND 50 OR ITEM 48.
3. VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
4. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER ON ITEM (52) IN ACCORDANCE WITH ND1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
5. MARK SCHEM AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .12 HIGH, COLOR BLACK.
6. THE FOLLOWING ARE PART OF THIS ASSEMBLY.
   LEAD SET A-A - ITEM (34)
   WIRING HARNESS A - ITEM (33)
   INTERCONNECT CABLE - ITEM (53)
7. SECURE ITEMS (19) USING ITEM (54)
8. ITEM (3) TO BE REMOVED FOR CALIBRATION.
9. DEFORM LAST TWO THREADS OF ITEM (40).



9
16
8
17
S5 25
S6 25
S4 25
S3 24
A21 6
A22 6
A23 6
IG
MG
OG
ON
OFF INHIBIT VOLTAGE FAIL
SPARE
.5 AMP 28 VDC
.5 AMP
ON OFF
SERVO TEST
POWER
E244
E243
X PIPA
3200 CPS REF
OFF
Y PIPA
Z PIPA
ACE SELECT
ACCEL MON
J243
J244
J232
J1 REF
26 27
F1 26 27
S1 24
4 37 41 8 EA REQD
33 REF
37 16 REQD
39 12 REQD
E1 38 42
S2 23 22
5 37 41 8 EA REQD
SEE NOTE 5
52
55 4 REQD
.12
2 REQD 40 SEE NOTE 9
2 REQD 47
2 REQD 43
2 REQD 46
2 REQD 44
11 37 41 45 2 EA REQD
37 41 4 EA REQD
35 36 19 2 EA REQD SEE NOTE 7
TERMINAL 1 (REF)
11 37 41 45 2 EA REQD
35 36 19 2 EA REQD SEE NOTE 7
35 36 19 2 EA REQD SEE NOTE 7
15
TERMINAL 2 (REF)
A24 7
10 37 41 45 3 EA REQD
38 3 REQD
3 37 41 14 EA REQD
10 37 41 45 3 EA REQD
TYPICAL CARD REMOVAL
3.26 REF
1
20 2 REQD
12 2 REQD
18 2 REQD
13 2 REQD
A2 28
A3 28
A4 28
A5 28
A6 28
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A8 28
A9 28
A10 14
A12 30
A13 30
A14 30
A15 30
A16 30
21 2 REQD
51 2 REQD
2
A20 29
A18 31
A17 30
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3

VIEW SHOWN WITH ITEM 3 REMOVED

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	F	REPLACES REVE WITH CHANGE PER MXC 210547		APR 66	
	G	REVISED PER MXC 2:08		APR 66	
	H	REVISED PER MXC 211188		8 APR 66	
	J	INITIAL RELEASE CLASS A PER TDRR 28598		2 MAY 66	

				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				X		56	PS6900088	PROCUREMENT SPECIFICATION
				4		55	AN515C2R2	(1896876-252) SCREW, MACHINE
				AR		54	MIL-S-22473, GRADE H	SEALING & RETAINING COMPOUND (ES2544-5)
				1		53	6900108	INTERCONNECT CABLE ASSY
				1		52	1004260-189	NAMEPLATE
				2		51	6900130	WASHER, FLAT
				AR		50	SN60 WS	SOLDER QQ-S-571 (ES2175-1)
				AR		49	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
				AR		48	SN60 WRAP	SOLDER QQ-S-571 (ES2175-3)
				2		47	MS35426-13	NUT, PLAIN, WING
				2		46	MS35650-104	NUT, HEX
				10		45	AN960C4L	(1897006-034) WASHER, PLAIN
				2		44	MS35338-81	WASHER, LOCK
				2		43	MS35333-73	WASHER, LOCK
				1		42	MS35333-71	WASHER, LOCK
				44		41	MS35338-78	WASHER, LOCK
				2		40	1006783-46	SCREW, BUTTON HD, HEX SOC
				12		39	1016151-004	NUT, SELF LOCKING
				4		38	1006783-24	SCREW, BUTTON HD, HEX SOC
				60		37	1006783-19	SCREW, BUTTON HD, HEX SOC
				6		36	1897408-001	RETAINER, CABLE STRAP
				6		35	1897406-005	STRAP, CABLE ADJUSTABLE
				1		34	6900138	LEAD SET AA
				1		33	6900089	WIRING HARNESS A
				X		32	6900131	SCHEMATIC, DIAGRAM, ELECTRICAL
				1		31	6900141-011	ATTENUATOR CIRCUIT ASSY
				6		30	2901154-011	GLITCH DETECTOR ASSY
				1		29	2901063-011	PHASE DIFFERENCE ASSY
				8		28	1902433-011	AC AMPLIFIER ASSY
				2		27	MS26572-1	FUSEHOLDER
				2		26	F02B250V1/2A	(1897099-025) FUSE MIL-F-15160/02
				3		25	1016265-006	SWITCH
				2		24	1016265-004	SWITCH
				1		23	1897379-001	SWITCH
				1		22	MS91528-0P1B	(1897080-001) KNOB
				2		21	MS16624-4025	(1897079-125) RING, RETAINING
				2		20	MS16629-4056	(1896925-008) RING, RETAINING
				6		19	AN505C8R5	(1896881-705) SCREW, MACH. FL. HD
				2		18	MS24585C255	(1897067-255) SPRING
				1		17	MS171538	PIN, SPRING
				1		16	MS24585C317	(1897067-317) SPRING
				1		15	2901222-001	GASKET, ELECTRICAL CONNECTOR
				1		14	1902434-011	LINE DRIVE AMPLIFIER ASSY
				2		13	6900128	SPACER, SLEEVE
				2		12	6900127	SCREW
				2		11	6900125	STOP, BLOCK
				2		10	6900124	STOP BLOCK
				1		9	6900123	BLOCK, PILLOW
				1		8	6900122	PIN, LOCATING (INSEP ASSY)
				1		7	6900120-011	ELECTRONIC COMPONENTS ASSY
				3		6	6900118-011	ELECTRONIC COMPONENTS ASSY
				1		5	6900117	PANEL, FRONT (INSEP ASSY)
				1		4	6900116	PANEL, CASE, TOP (INSEP ASSY)
				1		3	6900115	COVER, CASE, BOTTOM (INSEP ASSY)
				1		2	6900114	GUIDE, TERM. BD (INSEP ASSY)
				1		1	6900113	CASE, PSA ADPT MODULE (INSEP ASSY)

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Miller DATE 6 JAN 66
CHECKED Ed Foster 15 MAR 66
APPROVAL
CONTRACT NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

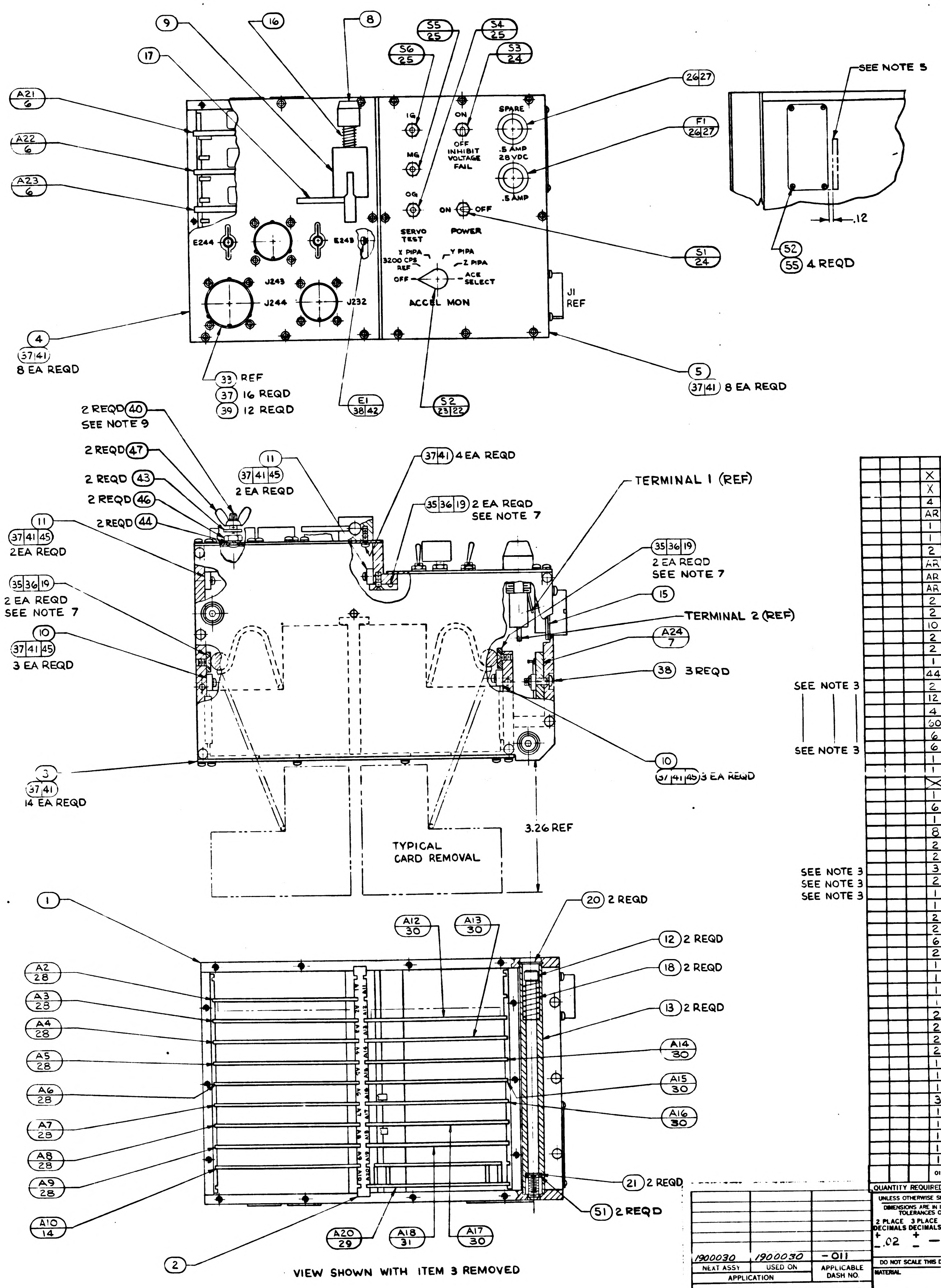
PSA ADAPTER MODULE (LEM)

SIZE E
CODE IDENT NO. 99974
6900088
SCALE FULL
SHEET OF 1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. SOLDER PER ND1002071 USING ITEMS 49 AND 50 OR ITEM 48.
3. VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
4. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER ON ITEM (52) IN ACCORDANCE WITH ND1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
5. MARK SCHEM AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .12 HIGH, COLOR BLACK.
6. THE FOLLOWING ARE PART OF THIS ASSEMBLY.
   LEAD SET A-A - ITEM (34)
   WIRING HARNESS A - ITEM (33)
   INTERCONNECT CABLE - ITEM (53)
7. SECURE ITEMS (19) USING ITEM (54)
8. ITEM (3) TO BE REMOVED FOR CALIBRATION.
9. DEFORM LAST TWO THREADS OF ITEM (40).

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	F	REPLACES REV E WITH CHANGE PER MXC 210547		6 APR 66	EF
	G	REVISED PER MXC 210872		7 APR 66	
	H	REVISED PER MXC 211188		16 APR 66	EF
	J	INITIAL RELEASE CLASS A PER TDRR 28598		2 MAY 66	EF
	K	REVISED PER TDRR 30099		5 JULY 66	



9
16
8
17
S5 25
S6 25
S4 25
S3 24
26 27
SEE NOTE 5
A21 6
A22 6
A23 6
IG
MG
OG
ON
OFF
INHIBIT
VOLTAGE
FAIL
SPARE
.5 AMP
28 VDC
.5 AMP
F1 26 27
E244
E243
J243
J244
J232
SERVO TEST
POWER
ON OFF
Y PIPA
X PIPA
3200 CPS REF
Z PIPA
OFF
ACE SELECT
ACCEL MON
S1 24
J1 REF
.12
52
55 4 REQD
4
37 41
8 EA REQD
33 REF
37 16 REQD
39 12 REQD
E1 38 42
S2 23 22
5
37 41 8 EA REQD
2 REQD 40
SEE NOTE 9
2 REQD 47
2 REQD 43
2 REQD 46
2 REQD 44
11
37 41 45
2 EA REQD
37 41 4 EA REQD
35 36 19 2 EA REQD
SEE NOTE 7
TERMINAL 1 (REF)
35 36 19
2 EA REQD
SEE NOTE 7
15
TERMINAL 2 (REF)
A24 7
38 3 REQD
10
37 41 45
3 EA REQD
3
37 41
14 EA REQD
10
37 41 45 3 EA REQD
TYPICAL CARD REMOVAL
3.26 REF
1
A12 30
A13 30
20 2 REQD
12 2 REQD
18 2 REQD
13 2 REQD
A2 28
A3 28
A4 28
A5 28
A6 28
A7 28
A8 28
A9 28
A10 14
A14 30
A15 30
A16 30
21 2 REQD
51 2 REQD
A20 29
A18 31
A17 30
2
VIEW SHOWN WITH ITEM 3 REMOVED

	QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				011				
				X		57	6900146	RUNNING LIST
				X		56	PS6900088	PROCUREMENT SPECIFICATION
				4		55	AN515C2R2	(1896876-252) SCREW, MACHINE
				AR		54	MIL-S-22473, GRADE H	SEALING & RETAINING COMPOUND (ES2544-5)
				1		53	6900108	INTERCONNECT CABLE ASSY
				1		52	1004260-189	NAMEPLATE
				2		51	6900130	WASHER, FLAT
				AR		50	SN60 WS	SOLDER QQ-S-571 (ES2175-1)
				AR		49	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
				AR		48	SN60 WRAP	SOLDER QQ-S-571 (ES2175-3)
				2		47	MS35426-13	NUT, PLAIN, WING
				2		46	MS35650-104	NUT, HEX
				10		45	AN960C4L	(1897006-034) WASHER, PLAIN
				2		44	MS35338-81	WASHER, LOCK
				2		43	MS35333-73	WASHER, LOCK
				1		42	MS35333-71	WASHER, LOCK
				44		41	MS35338-78	WASHER, LOCK
SEE NOTE 3				2		40	1006783-46	SCREW, BUTTON HD, HEX SOC
				12		39	1016151-004	NUT, SELF LOCKING
				4		38	1006783-24	SCREW, BUTTON HD, HEX SOC
				60		37	1006783-19	SCREW, BUTTON HD, HEX SOC
				6		36	1897408-001	RETAINER, CABLE STRAP
SEE NOTE 3				6		35	1897406-005	STRAP, CABLE ADJUSTABLE
				1		34	6900138	LEAD SET AA
				1		33	6900089	WIRING HARNESS A
				X		32	6900131	SCHEMATIC, DIAGRAM, ELECTRICAL
				1		31	6900141-011	ATTENUATOR CIRCUIT ASSY
				6		30	2901154-011	GLITCH DETECTOR ASSY
				1		29	2901063-011	PHASE DIFFERENCE ASSY
				8		28	1902433-011	AC AMPLIFIER ASSY
				2		27	MS26572-1	FUSEHOLDER
				2		26	F02B250V1/2A	(1897099-025) FUSE MIL-F-15160/02
SEE NOTE 3				3		25	1016265-006	SWITCH
SEE NOTE 3				2		24	1016265-004	SWITCH
SEE NOTE 3				1		23	1897379-001	SWITCH
				1		22	MS91528-0P1B	(1897080-001) KNOB
				2		21	MS16624-4025	(1897079-125) RING, RETAINING
				2		20	MS16629-4056	(1896925-008) RING, RETAINING
				6		19	AN505C8R5	(1896881-705) SCREW, MACH. FL. HD
				2		18	MS24585C255	(1897067-255) SPRING
				1		17	MS171538	PIN, SPRING
				1		16	MS24585C317	(1897067-317) SPRING
				1		15	2901222-001	GASKET, ELECTRICAL CONNECTOR
				1		14	1902434-011	LINE DRIVE AMPLIFIER ASSY
				2		13	6900128	SPACER, SLEEVE
				2		12	6900127	SCREW
				2		11	6900125	STOP, BLOCK
				2		10	6900124	STOP, BLOCK
				1		9	6900123	BLOCK, PILLOW
				1		8	6900122	PIN LOCATING (INSEP ASSY)
				1		7	6900120-011	ELECTRONIC COMPONENTS ASSY
				3		6	6900118-011	ELECTRONIC COMPONENTS ASSY
				1		5	6900117	PANEL, FRONT (INSEP ASSY)
				1		4	6900116	PANEL, CASE, TOP (INSEP ASSY)
				1		3	6900115	COVER, CASE, BOTTOM (INSEP ASSY)
				1		2	6900114	GUIDE, TERM. BD (INSEP ASSY)
				1		1	6900113	CASE, PSA ADPT MODULE (INSEP ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Miller DATE 6 JAN 66
CHECKED Ed Foster 15 MAR 66
APPROVAL
CONTRACT NAS9-497
NASA APPROVAL 5/4/66
MIT APPROVAL

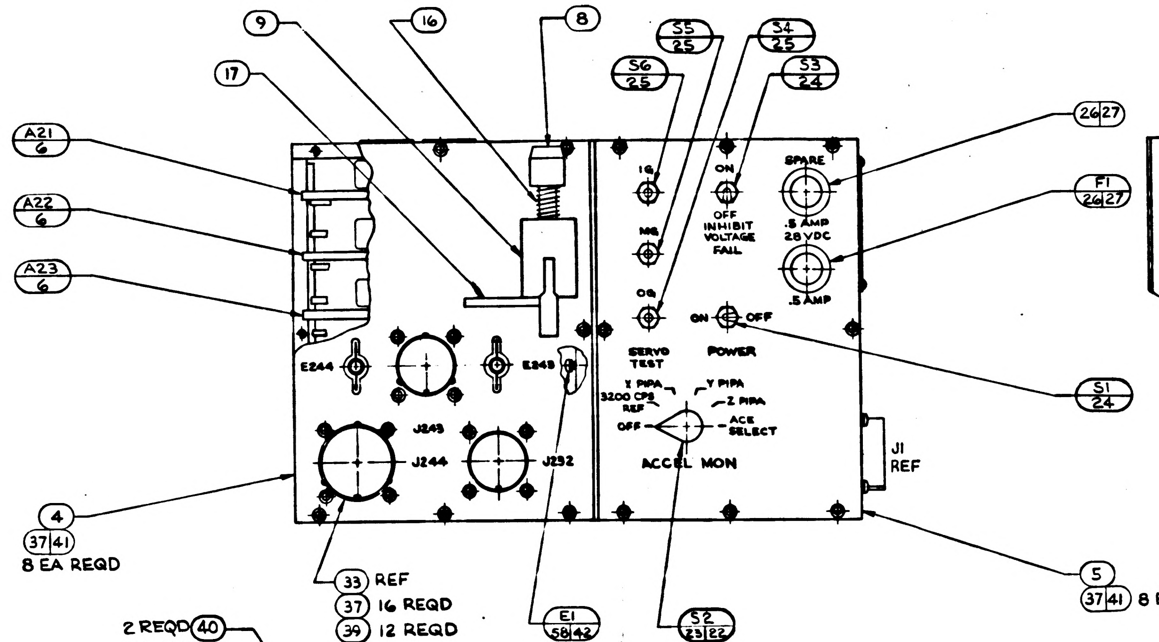
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PSA ADAPTER MODULE
(LEM)

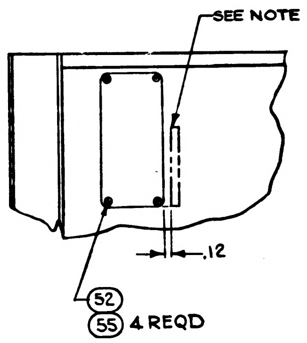
SIZE E
CODE IDENT NO. 99974
6900088
SCALE FULL
SHEET 1 OF 1

NOTES:

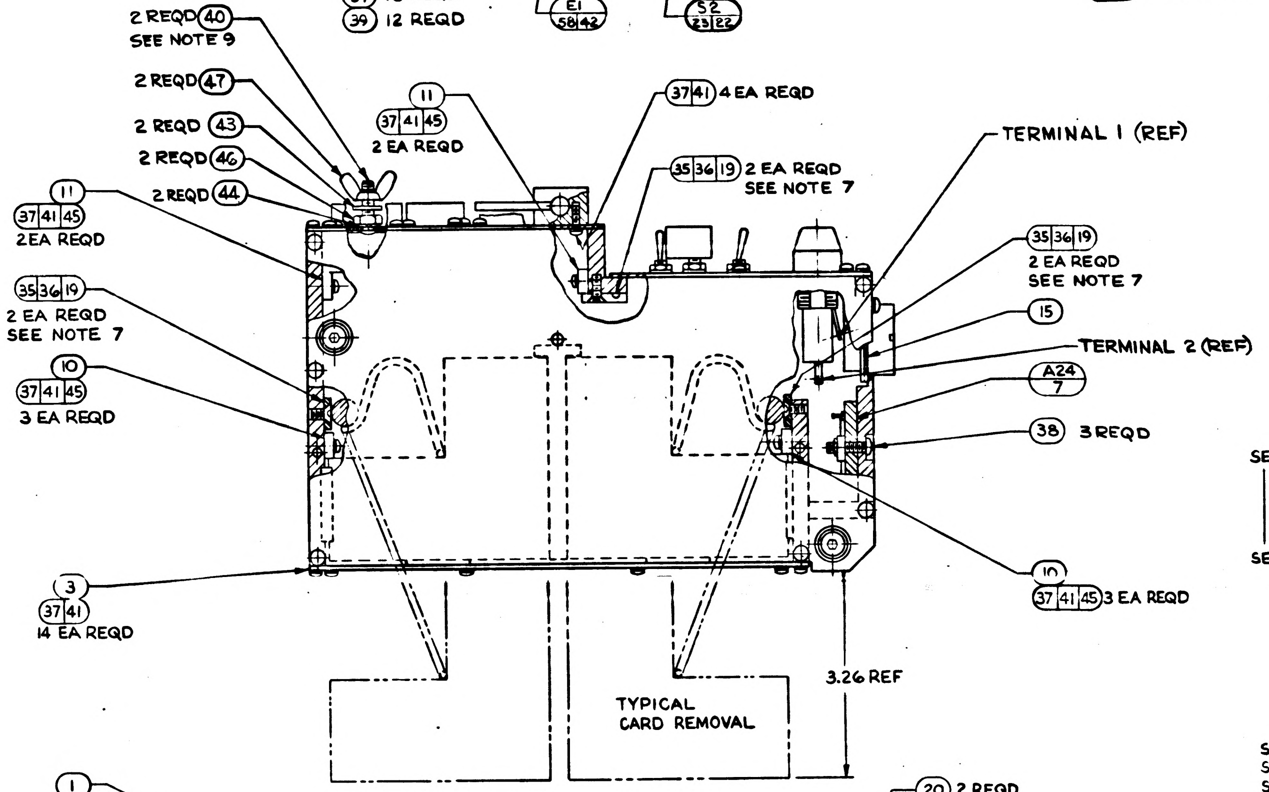
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. SOLDER PER ND1002071 USING ITEMS 49 AND 50 OR ITEM 48.
3. VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
4. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER ON ITEM (52) IN ACCORDANCE WITH ND1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
5. MARK SCHEM AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .12 HIGH, COLOR BLACK.
6. THE FOLLOWING ARE PART OF THIS ASSEMBLY.
   LEAD SET A-A - ITEM ㉞
   WIRING HARNESS A - ITEM ㉝
   INTERCONNECT CABLE - ITEM (53)
7. SECURE ITEMS ⑲ USING ITEM (54)
8. ITEM ③ TO BE REMOVED FOR CALIBRATION.
9. DEFORM LAST TWO THREADS OF ITEM ㊵.



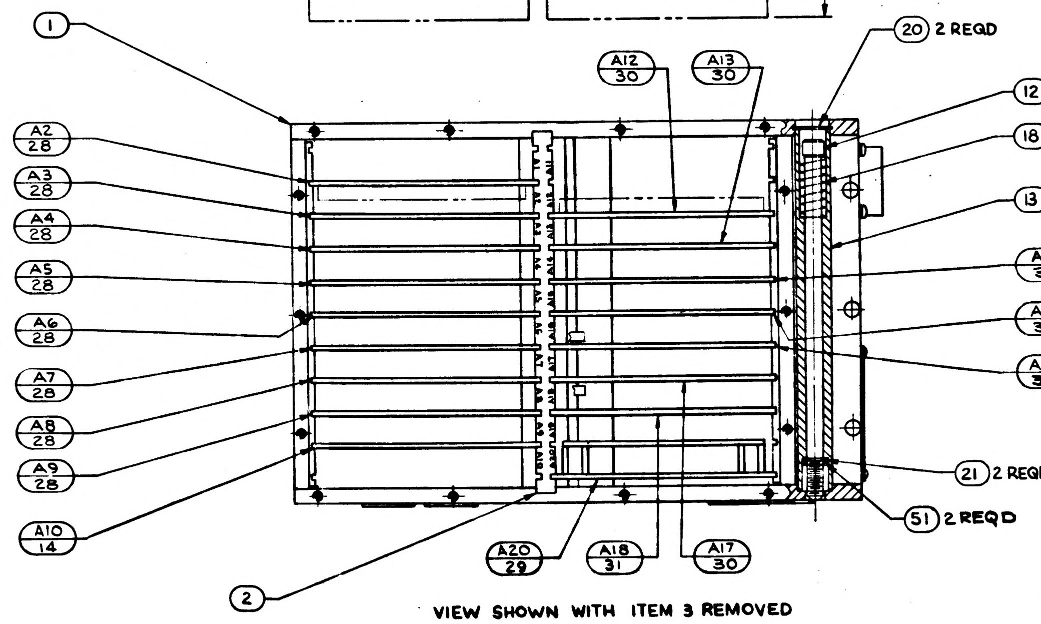
9
16
8
17
S5 25
S4 25
S6 25
S3 24
26 27
F1 26 27
A21 6
A22 6
A23 6
1G
MG
OG
ON
OFF
INHIBIT
VOLTAGE
FAIL
SPARE
.5 AMP
28 VDC
.5 AMP
ON
OFF
SERVO TEST
POWER
E244
E243
Y PIPA
3200 CPS REF
X PIPA
Z PIPA
OFF
ACE SELECT
ACCEL MON
J243
J244
J232
J1 REF
S1 24
4
37 41
8 EA REQD
33 REF
37 16 REQD
39 12 REQD
E1 58 42
S2 23 22
5
37 41 8 EA REQD



SEE NOTE 5
.12
52
55 4 REQD



2 REQD 40
SEE NOTE 9
2 REQD 47
2 REQD 43
2 REQD 46
2 REQD 44
11
37 41 45
2 EA REQD
11
37 41 45
2 EA REQD
37 41 4 EA REQD
35 36 19 2 EA REQD
SEE NOTE 7
TERMINAL 1 (REF)
35 36 19
2 EA REQD
SEE NOTE 7
35 36 19
2 EA REQD
SEE NOTE 7
15
TERMINAL 2 (REF)
10
37 41 45
3 EA REQD
A24 7
38 3 REQD
10
37 41 45 3 EA REQD
3
37 41
14 EA REQD
TYPICAL CARD REMOVAL
3.26 REF



1
A12 30
A13 30
20 2 REQD
12 2 REQD
18 2 REQD
13 2 REQD
A2 28
A3 28
A4 28
A5 28
A6 28
A7 28
A8 28
A9 28
A10 14
A14 30
A15 30
A16 30
21 2 REQD
51 2 REQD
A20 29
A18 31
A17 30
2

VIEW SHOWN WITH ITEM 3 REMOVED

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	F	REPLACES REV E WITH CHANGE PER MXC 210847		6 APR 66	JJJ EF
	G	REVISED PER MXC 210872		7 APR 66	
	H	REVISED PER MXC 211188		18 APR 66	EF
	J	INITIAL RELEASE CLASS A PER TDRR 28598		2 MAY 66	EF
	K	REVISED PER TDRR 30099		5 JULY 66	
	L	REVISED PER TDRR 30524		9 AUG 66	

SEE NOTE 3
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3
SEE NOTE 3

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1		58	1006783-21	SCREW, BUTTON HD HEX. SOC.
			X		57	6900146	RUNNING LIST
			X		56	PS6900088	PROCUREMENT SPECIFICATION
			4		55	AN515C2R2	(1896876-252) SCREW, MACHINE
			AR		54	MIL-S-22473, GRADE H	SEALING & RETAINING COMPOUND (ES2544-5)
			1		53	6900108	INTERCONNECT CABLE ASSY
			1		52	1004260-189	NAMEPLATE
			2		51	6900130	WASHER, FLAT
			AR		50	SN60 WS	SOLDER QQ-S-571 (ES2175-1)
			AR		49	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
			AR		48	SN60 WRAP	SOLDER QQ-S-571 (ES2175-3)
			2		47	MS35426-13	NUT, PLAIN, WING
			2		46	MS35650-104	NUT, HEX
			10		45	AN960C4L	(1897006-034) WASHER, PLAIN
			2		44	MS35338-81	WASHER, LOCK
			2		43	MS35333-73	WASHER, LOCK
			1		42	MS35333-71	WASHER, LOCK
			44		41	MS35338-78	WASHER, LOCK
			2		40	1006783-46	SCREW, BUTTON HD, HEX SOC
			12		39	1016151-004	NUT, SELF LOCKING
			3		38	1006783-24	SCREW, BUTTON HD, HEX SOC
			60		37	1006783-19	SCREW, BUTTON HD, HEX SOC
			6		36	1897408-001	RETAINER, CABLE STRAP
			6		35	1897406-005	STRAP, CABLE ADJUSTABLE
			1		34	6900138	LEAD SET AA
			1		33	6900089	WIRING HARNESS A
			X		32	6900131	SCHEMATIC, DIAGRAM, ELECTRICAL
			1		31	6900141-011	ATTENUATOR CIRCUIT ASSY
			6		30	2901154-011	GLITCH DETECTOR ASSY
			1		29	2901063-011	PHASE DIFFERENCE ASSY
			8		28	1902433-011	AC AMPLIFIER ASSY
			2		27	MS26572-1	FUSEHOLDER
			2		26	F02B250V1/2A	(1897099-025) FUSE MIL-F-15160/02
			3		25	1016265-006	SWITCH
			2		24	1016265-004	SWITCH
			1		23	1897379-001	SWITCH
			1		22	MS91528-0P1B	(1897080-001) KNOB
			2		21	MS16624-4025	(1897079-125) RING, RETAINING
			2		20	MS16629-4056	(1896925-008) RING, RETAINING
			6		19	AN505C8R5	(1896881-705) SCREW, MACH. FL. HD
			2		18	MS24585C255	(1897067-255) SPRING
			1		17	MS171538	PIN, SPRING
			1		16	MS24585C317	(1897067-317) SPRING
			1		15	2901222-001	GASKET, ELECTRICAL CONNECTOR
			1		14	1902434-011	LINE DRIVE AMPLIFIER ASSY
			2		13	6900128	SPACER, SLEEVE
			2		12	6900127	SCREW
			2		11	6900125	STOP, BLOCK
			2		10	6900124	STOP, BLOCK
			1		9	6900123	BLOCK, PILLOW
			1		8	6900122	PIN, LOCATING (INSEP ASSY)
			1		7	6900120-011	ELECTRONIC COMPONENTS ASSY
			3		6	6900118-011	ELECTRONIC COMPONENTS ASSY
			1		5	6900117	PANEL, FRONT (INSEP ASSY)
			1		4	6900116	PANEL, CASE, TOP (INSEP ASSY)
			1		3	6900115	COVER, CASE, BOTTOM (INSEP ASSY)
			1		2	6900114	GUIDE, TERM. BD (INSEP ASSY)
			1		1	6900113	CASE, PSA ADPT MODULE (INSEP ASSY)
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ±
ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Miller DATE 6 JAN 66
CHECKED Ed Foster 15 MAR 66
APPROVAL
CONTRACT NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PSA ADAPTER MODULE
(LEM)

SIZE E
CODE IDENT NO. 99974
6900088
SCALE FULL
SHEET 1 OF 1

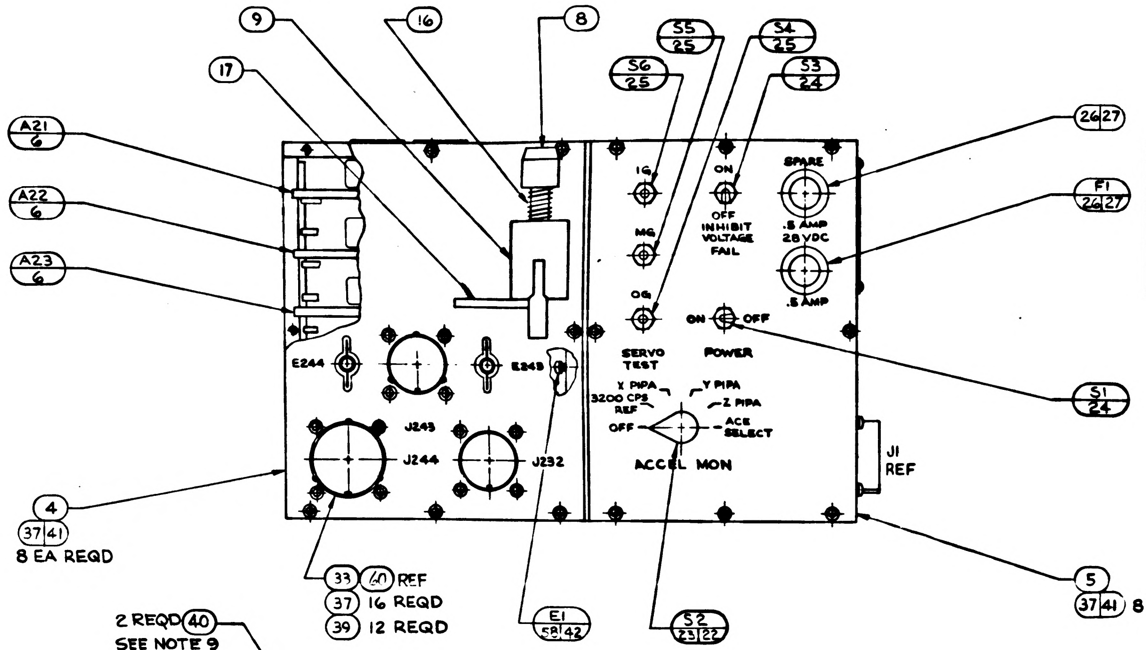
NOTES:

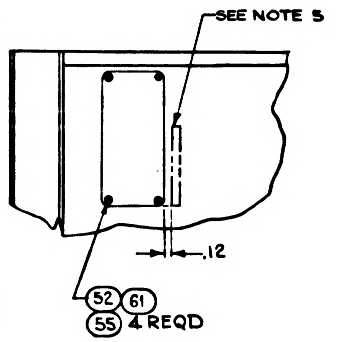
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. SOLDER PER ND1002071 USING ITEMS 49 AND 50 OR ITEM 48.
3. VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
4. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER ON ITEMS (52) OR (61) IN ACCORDANCE WITH ND1002023. LETTERS AND NUMERALS TO BE .06 - G?.
5. MARK SCHEM' AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .12 - GH, COLOR BLACK.
6. THE FOLLOWING ARE PART OF THIS ASSEMBLY.

   LEAD SET A-A - ITEM (34)

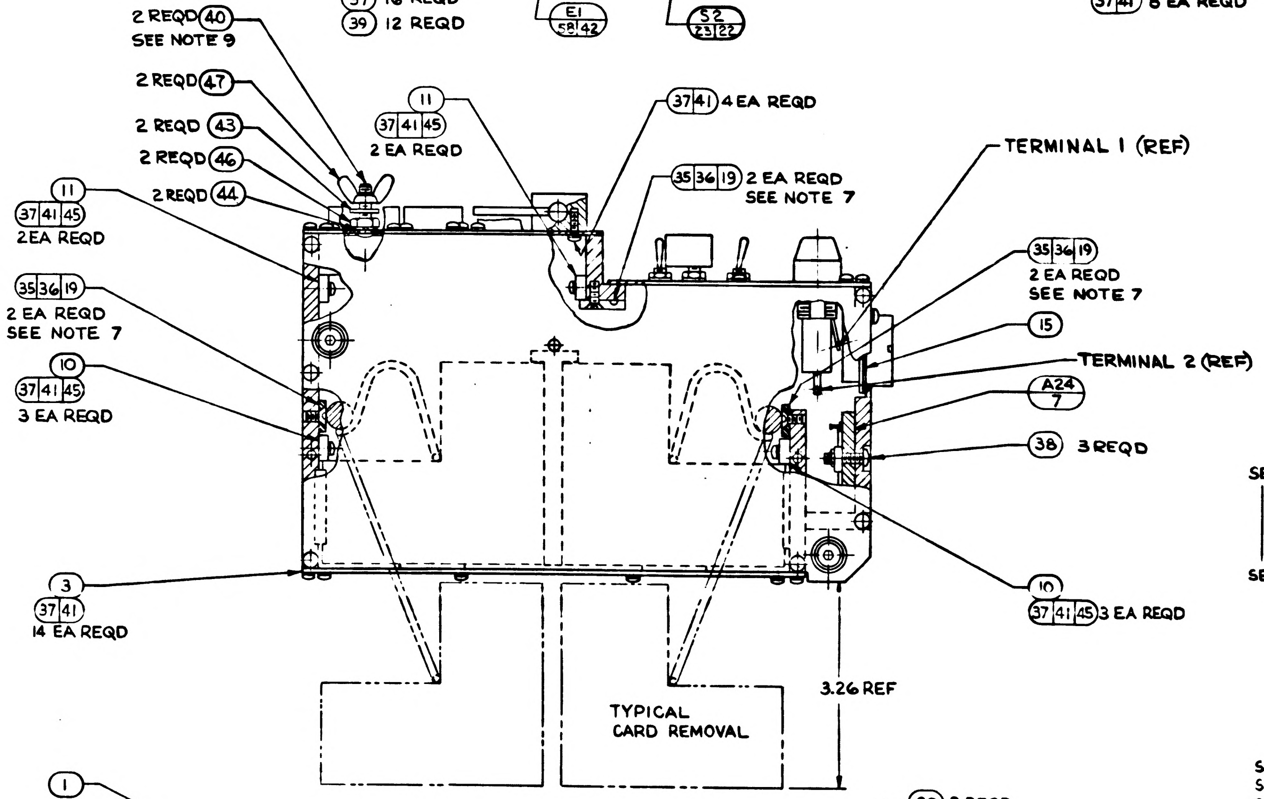
   WIRING HARNESS A - ITEMS (33) OR (60).

   INTERCONNECT CABLE - ITEM (53)
7. SECURE ITEMS (19) USING ITEM (54)
8. ITEM (3) TO BE REMOVED FOR CALIBRATION.
9. DEFORM LAST TWO THREADS OF ITEM (40).


9
16
8
S5 25
S4 25
S6 25
S3 24
17
26 27
A21 6
A22 6
A23 6
F1 26 27
IG
ON
OFF
INHIBIT
VOLTAGE
FAIL
SPARE
.5 AMP
28 VDC
.5 AMP
MG
OG
ON
OFF
SERVO TEST
POWER
E244
E243
J243
J244
J232
X PIPA
3200 CPS REF
Y PIPA
Z PIPA
OFF
ACC SELECT
ACCEL MON
J1 REF
S1 24
4
37 41
8 EA REQD
33 60 REF
37 16 REQD
39 12 REQD
E1 58 42
S2 23 22
5
37 41 8 EA REQD


SEE NOTE 5
.12
52 61
55 4 REQD

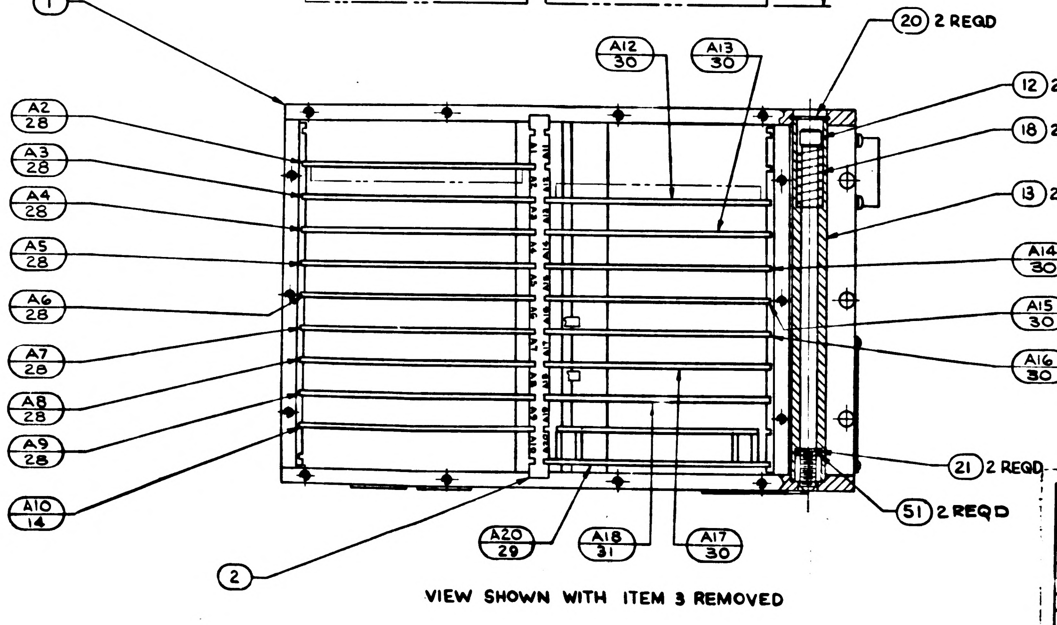
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	F	REPLACES REV E WITH CHANGE PER MXC 210547		6 APR 66	JJ EF
	G	REVISED PER MXC 210872		7 APR 66	JW
	H	REVISED PER MXC 211188		18 APR 66	EF
	J	INITIAL RELEASE CLASS A PER TDRR 28578		2 MAY 66	EF
	K	REVISED PER TDRR 30099		15 JULY 66	
	L	REVISED PER TDRR 30524		66	JI
	M	REVISED PER TDRR 34015			


2 REQD 40
SEE NOTE 9
2 REQD 47
2 REQD 43
2 REQD 46
2 REQD 44
11
37 41 45
2 EA REQD
11
37 41 45
2 EA REQD
37 41 4 EA REQD
35 36 19 2 EA REQD
SEE NOTE 7
TERMINAL 1 (REF)
35 36 19
2 EA REQD
SEE NOTE 7
35 36 19
2 EA REQD
SEE NOTE 7
15
10
37 41 45
3 EA REQD
TERMINAL 2 (REF)
A24 7
38 3 REQD
3
37 41
14 EA REQD
10
37 41 45 3 EA REQD
TYPICAL CARD REMOVAL
3.26 REF

					EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X	-		63	6900150	RUNNING LIST
			X	-		62	PS 6016362	PROCUREMENT SPECIFICATION
			1	-		61	1004260-558	NAMEPLATE
			1	-		60	6900152	WIRING HARNESS A
			X	-		59	6900151	SCHEMATIC, DIAGRAM, ELECTRICAL
			1	1		58	1006783-21	SCREW, BUTTON HD HEX. SOC.
			-	X		57	6900146	RUNNING LIST
			-	X		56	PS6900088	PROCUREMENT SPECIFICATION
			4	4		55	AN515C2R2	(1896876-252) SCREW, MACHINE
			AR	AR		54	MIL-S-22473, GRADE H	SEALING & RETAINING COMPOUND (ES2544-5)
			1	1		53	6900108	INTERCONNECT CABLE ASSY
			-	1		52	1004260-189	NAMEPLATE
			2	2		51	6900130	WASHER, FLAT
			AR	AR		50	SN60 WS	SOLDER QQ-S-571 (ES2175-1)
			AR	AR		49	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
			AR	AR		48	SN60 WRAP	SOLDER QQ-S-571 (ES2175-3)
			2	2		47	MS35426-13	NUT, PLAIN, WING
			2	2		46	MS35650-104	NUT, HEX
			10	10		45	AN960C4L	(1897006-034) WASHER, PLAIN
			2	2		44	MS35338-81	WASHER, LOCK
			2	2		43	MS35333-73	WASHER, LOCK
			1	1		42	MS35333-71	WASHER, LOCK
			44	44		41	MS35338-78	WASHER, LOCK
SEE NOTE 3			2	2		40	1006783-46	SCREW, BUTTON HD, HEX SOC
			12	12		39	1016151-004	NUT, SELF LOCKING
			3	3		38	1006783-24	SCREW, BUTTON HD, HEX SOC
			60	60		37	1006783-19	SCREW, BUTTON HD, HEX SOC
			6	6		36	1897408-001	RETAINER, CABLE STRAP
SEE NOTE 3			6	6		35	1897406-005	STRAP, CABLE ADJUSTABLE
			1	1		34	6900138	LEAD SET AA
			-	1		33	6900089	WIRING HARNESS A
			-	X		32	6900131	SCHEMATIC, DIAGRAM, ELECTRICAL
			1	1		31	6900141-011	ATTENUATOR CIRCUIT ASSY
			6	6		30	2901154-011	GLITCH DETECTOR ASSY
			1	1		29	2901063-011	PHASE DIFFERENCE ASSY
			8	8		28	1902433-011	AC AMPLIFIER ASSY
			2	2		27	MS26572-1	FUSEHOLDER
			2	2		26	F02B250V1/2A	(1897099-025) FUSE MIL-F-15160/02
SEE NOTE 3			3	3		25	1016265-006	SWITCH
SEE NOTE 3			2	2		24	1016265-004	SWITCH
SEE NOTE 3			1	1		23	1897379-001	SWITCH
			1	1		22	MS91528-0P13	(1897080-001) KNOB
			2	2		21	MS16624-4025	(1897079-125) RING, RETAINING
			2	2		20	MS16629-4056	(1896925-008) RING, RETAINING
			6	6		19	AN505C8R5	(1896881-705) SCREW, MACH. FL. HD
			2	2		18	MS24585C255	(1897067-255) SPRING
			1	1		17	MS171538	PIN, SPRING
			1	1		16	MS24585C317	(1897067-317) SPRING
			1	1		15	2901222-001	GASKET, ELECTRICAL CONNECTOR
			1	1		14	1902434-011	LINE DRIVE AMPLIFIER ASSY
			2	2		13	6900128	SPACER, SLEEVE
			2	2		12	6900127	SCREW
			2	2		11	6900125	STOP, BLOCK
			2	2		10	6900124	STOP, BLOCK
			1	1		9	6900123	BLOCK, PILLOW
			1	1		8	6900122	PIN, LOCATING (INSEP ASSY)
			1	1		7	6900120-011	ELECTRONIC COMPONENTS ASSY
			3	3		6	6900118-011	ELECTRONIC COMPONENTS ASSY
			1	1		5	6900117	PANEL, FRONT (INSEP ASSY)
			1	1		4	6900116	PANEL, CASE, TOP (INSEP ASSY)
			1	1		3	6900115	COVER, CASE, BOTTOM (INSEP ASSY)
			1	1		2	6900114	GUIDE, TERM. BD (INSEP ASSY)
			1	1		1	6900113	CASE, PSA ADPT MODULE (INSEP ASSY)
			021	011				

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS


1
A12 30
A13 30
20 2 REQD
A2 28
A3 28
A4 28
A5 28
A6 28
A7 28
A8 28
A9 28
A10 14
12 2 REQD
18 2 REQD
13 2 REQD
A14 30
A15 30
A16 30
21 2 REQD
51 2 REQD
A20 29
A18 31
A17 30
2

VIEW SHOWN WITH ITEM 3 REMOVED

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1900030	1900030	-021
1900030	1900030	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Miller DATE 6 JAN 66
CHECKED Ed Foster 16 MAR 66
APPROVAL
CONTRACT NAS9-497
NASA APPROVAL 5/4/66
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PSA ADAPTER MODULE
(LEM)

SIZE E
CODE IDENT NO. 99974
6900088
SCALE
SHEET 1 OF 1

APPLICATION	
NEXT ASSY	USED ON
6900088-011	6900088-011

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV A WITH CHANGE PER MXC 210438	6 APR 66	JJJ PJ
C	REVISED PER MXC 210874	18 APR 66	RP
D	REVISED PER MXC 210947	22 APR 66	MG
E	REVISED PER MXC 211543	27 APR 66	LGC
F	REVISED PER MXC 211822	28 APR 66	GM RWH
G	INITIAL RELEASE CLASS A PER TDRR 28598	2 MAY 66	BLD EF

Charleston 15-MAR-66

REV	G	G	
SHEET	24	25	

REV STATUS OF SHEETS																							
REV	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
D.O. 61601

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN M. Grabner 6 JAN 66
DAY MO YR
CHECKER Ed Foster 11 MAR 66
ENGINEER
APPROVAL 5/4/66
CONTR NO. NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

SIZE A
CODE IDENT. NO 99974
6900089
SCALE NONE
SHEET 1 OF 25

MIL 1377A6 12-65

NOTE NUMBER — GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

4 NUMBER IN BRACKETS ARE QUANTITIES OF LEADS

5 SOLDER PER ND1002071 USING ITEM 20 OR ITEMS 22 AND 21.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER

7 LENGTHS SPECIFIED ARE BEFORE ACCESSORIES ARE ATTACHED.

8 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - SHIELD LEAD ON FROM END
L - WHITE WITH BLUE TRACER.
R - WHITE WITH RED TRACER.

9 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 3.

10 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

11 SPACING OF LEAD IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

12 SPIRALLING OF LEAD IDENTIFICATION IS ALLOWED.

13 ASSEMBLE PER ND1002032.

14 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.

NOTE NUMBER — GENERAL NOTES DESCRIPTION

15 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

16 ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.

17 DO NOT SPOT TIE IN THIS AREA.

18 SPOT TIE AS REQUIRED USING ITEM 3.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900089-001	WIRE, ND1002181 TYPE I CLASS I 24AWG WHITE 400 FEET TOTAL LENGTH
	2	1	6900089-002	WIRE, ND1002181 TYPE II CLASS 4, 24AWG WHT/BLU, WHT/RED 2 FEET TOTAL LENGTH
3	3	70	1897406-005	STRAP, CABLE, ADJUSTABLE
3	4	1	6900132	CONNECTOR, RECEPTACLE, ELECTRICAL (INSEPARABLE ASSEMBLY)
	5	1	MS3102R14S-7S(C)	(1896916-107) CONNECTOR, RECEPTACLE
3	6	1	1897252-109	CONNECTOR, RECEPTACLE
3	7	1	1897247-001	CONNECTOR, RECEPTACLE
3	8	44	1015864-109	INSULATION-SLEEVING, ELECTRICAL
3	9	3	1015864-167	INSULATION-SLEEVING, ELECTRICAL
3	10	6	1015864-082	INSULATION-SLEEVING, ELECTRICAL
3	11	4	1015864-105	INSULATION-SLEEVING, ELECTRICAL
3	12	4	1010490-228	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINK
3	13	2	1010763- 2	SOLDER SLEEVE
3	14	2	1015902- 45	TERMINAL LUG
3	15	1	1016128-011	BAND IDENTIFICATION
3	16	3	1016006-001	SPLICE-REDUCER
3	17	1	1016006-002	SPLICE-REDUCER

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
3	18	3	1010490-198	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
3	19	1	1010490-258	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
	20	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
	21	AR	MIL-F 14256 TYPE A OR W	FLUX (ES2798)
	22	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)

WIRING HARNESS A 6900089 G ~~6~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1		J243-31 A21-1	16 26				.15 .25	NO YES			
A 2	1		J243-30 A21-2	16 26				.15 .25	NO YES			
A 3	1		J243-29 A21-3	16 28				.15 .25	NO YES			
A 4	1		J243-14 A21-4	16 28				.15 .25	NO YES			
A 5	1		J243-13 A21-5	16 26				.15 .25	NO YES			
A 6	1		J243-28 A21-6	16 26				.15 .25	NO YES			
A 7	1		A21K1-3 S2-5	26 2				.25 .25	YES YES		8 10	
A 8	1		A21K1-3 J1-78	26 1				.25 .15	YES NO		8	
A 9	1		A21K2-3 S2-4	27 2				.25 .25	YES YES		8 10	
A 10	1		A21K2-3 J1-32	27 1				.25 .15	YES NO		8	
A 11	1		A21K3-3 S2-3	27 2				.25 .25	YES YES		8 10	
A 12	1		A21K3-3 J1-33	27 1				.25 .15	YES NO		8	

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~6~~ G
SHEET 6 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~6~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		A24K1-3 S2-2	33 2				.25 .25	YES YES		8 10	
A 14	1		A24K1-3 A18-10	33 37				.25 .25	YES YES		8	
A 15	1		A21K3-8 A24K1-2	27 33				.25 .25	YES YES		8 8	
A 16	1		J243-5 A24-1	16 32				.15 .25	NO YES			
A 17	1		J243-6 A24-2	16 32				.15 .25	NO YES			
A 18	1		A24K1-8 S2-6	33 2				.25 .25	YES YES		8 10	
A 19	1		S2-C1 A9-1	2 14				.25 .25	YES YES		10	
A 20	1		J232-A A10-3	4 15				.25 .25	YES YES		9	
A 21	1		J232-B A10-1	4 15				.25 .25	YES YES		9	
A 22	1		A10-7 A9-17	15 14				.25 .25	YES YES			
A 23	1		A10-21 A9-9	15 14				.25 .25	YES YES			
A 24	1		A10-19 A9-13	15 14				.25 .25	YES YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~6~~ G
SHEET 7 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		A9-15 A18-12	14 37				.25 .25	YES YES			
A 26	1		A20-17 A18-12	36 37				.25 .25	YES YES			
A 27	1		A20-22 A18-10	36 37				.25 .25	YES YES			
A 28	1		S1-3 A10-19	30 15				.25 .25	YES YES		8	
A 29	1		A18-9 J1-65	37 1				.25 .15	YES NO			
A 30	1		A18-24 E5-BB	37 34A				.25 .26	YES NO			
A 31	1		J1-79 E5-B	1 34A				.15 .26	NO NO			
A 32	1		J1-54 E5-B	1 34A				.15 .26	NO NO			
A 33	1		J1-16 E5-B	1 34A				.15 .26	NO NO			
A 34	1		J1-64 E5-B	1 34A				.15 .26	NO NO			
A 35	1		J1-45 A20-75	1 36				.15 .25	NO YES			
A 36	1		J1-69 A20-78	1 36				.15 .25	NO YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~8~~ G
SHEET 8 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		J244-76 A20-3	5 36				.15 .25	NO YES			
A 38	1		J244-77 A20-14	5 36				.15 .25	NO YES			
A 39	1		J1-66 XF1-2	1 34				.15 .25	NO YES		 11	
A 40	1		J1-67 XF1-2	1 34				.15 .25	NO YES		 11	
A 41	1		J1-68 XF1-2	1 34				.15 .25	NO YES		 11	
A 42	1		S1-2 XF1-1	30 34				.25 .25	YES YES		8 11	
A 43	1		A20-81 A18-16	36 37				.25 .25	YES YES			
A 44	1		J1-6 S3-1	1 29				.15 .25	NO YES		 8	
A 45	1		A20-81 S1-3	36 30				.25 .25	YES YES		 8	
A 46	1		S3-2 A22K1-3	29 24				.25 .25	YES YES		8 8	
A 47	1		J243-35 A22K3-1	16 25				.15 .25	NO YES		 8	
A 48	1		J1-59 A22K2-3	1 25				.15 .25	NO YES		 8	

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~8~~ G
SHEET 9 OF 25

MIL 2084 9-65

WIRING HARNESS A

6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		J243-22	16				.15	NO			
			A22K2-4	25				.25	YES		8	
A 50	1		J243-8	16				.15	NO			
			A22K2-8	25				.25	YES		8	
A 51	1		J243-18	16				.15	NO			
			A22K3-5	25				.25	YES		8	
A 52	1		J243-39	16				.15	NO			
			A22K3-4	25				.25	YES		8	
A 53	1		J243-20	16				.15	NO			
			A22K3-8	25				.25	YES		8	
A 54	1		J1-18	1				.15	NO			
			A22K3-7	25				.25	YES		8	
A 55	1		J1-36	1				.15	NO			
			A22K3-3	25				.25	YES		8	
A 56	1		J232-C	4				.25	YES		9	
			E1	17				.25	NO		14	
A 57	1		A18-13	37				.25	YES			
			A23K1-8	22				.25	YES		8	
A 58	1		A18-17	37				.25	YES			
			A23K3-8	21				.25	YES		8	
A 59	1		J1-76	1				.15	NO			
			S4-1	18				.25	YES		8	
A 60	1		A23K1-3	22				.25	YES		8	
			S4-1	18				.25	YES		8	

SIZE A	CODE IDENT NO. 99974	6900089
SCALE-NONE	REV LTR ~~8~~ ~~F~~ G	SHEET 10 OF 25

MIL 2084 9-65

WIRING HARNESS A

6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		S4-2	18				.25	YES		8	
			A23K1-2	22				.25	YES		8	
A 62	1		J243-17	16				.15	NO			
			A23-1	23				.25	YES			
A 63	1		J243-34	16				.15	NO			
			A23-2	23				.25	YES			
A 64	1		J1-53	1				.15	NO			
			S5-1	18				.25	YES		8	
A 65	1		A23K2-3	21				.25	YES		8	
			S5-1	18				.25	YES		8	
A 66	1		A23K2-2	21				.25	YES		8	
			S5-2	18				.25	YES		8	
A 67	1		J243-33	16				.15	NO			
			A23-3	19				.25	YES			
A 68	1		J243-16	16				.15	NO			
			A23-4	19				.25	YES			
A 69	1		J1-77	1				.15	NO			
			S6-1	29				.25	YES		8	
A 70	1		A23K3-3	21				.25	YES		8	
			S6-1	29				.25	YES		8	
A 71	1		A23K3-2	21				.25	YES		8	
			S6-2	29				.25	YES		8	
A 72	1		J243-15	16				.15	NO			
			A23-5	20				.25	YES			

SIZE A	CODE IDENT NO. 99974	6900089
SCALE-NONE	REV LTR ~~F~~ G	SHEET 11 OF 25

MIL 2084 9-65

WIRING HARNESS A

6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		J243-32	16				.15	NO			
			A23-6	20				.25	YES			
A 74	2				3.30	3.00				A,68	13, 12	
					3.30	3.00				B,7	12	
A 74A	1		SHLD OF A74					.15	NO			
			J1-48	1				.15	NO			
A 74L			J1-72	1				.15	NO			
			J243-42	16				.15	NO			
A 74R			J1-73	1				.15	NO			
			J243-24	16				.15	NO			
A 75	2				3.80	3.50				A,68	13, 12	
					3.30	3.00				B,7	12	
A 75A	1		SHLD OF A75					.15	NO			
			J1-46	1				.15	NO			
A 75L			J1-70	1				.15	NO			
			J243-43	16				.15	NO			
A 75R			J1-71	1				.15	NO			
			J243-44	16				.15	NO			
A 76	1		J1-24	1				.15	NO			
			J244-1	5				.15	NO			
A 77	1		J1-25	1				.15	NO			
			J244-79	5				.15	NO			
A 78	1		J1-23	1				.15	NO			
			E3-B	35				.27	NO			

SIZE A	CODE IDENT NO. 99974	6900089
SCALE-NONE	REV LTR ~~F~~ G	SHEET 12 OF 25

MIL 2084 9-65

WIRING HARNESS A

6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1		J244-2	5				.15	NO			
			E3-B	35				.27	NO			
A 80	1		J244-19	5				.15	NO			
			E3-B	35				.27	NO			
A 81	1		A12-37	43				.25	YES			
			E3-B	35				.27	NO			
A 82	1		A13-37	42				.25	YES			
			E3-B	35				.27	NO			
A 83	1		A15-37	40				.25	YES			
			E3-BB	35				.27	NO			
A 84	1		A16-37	39				.25	YES			
			E3-BB	35				.27	NO			
A 85	1		A17-37	38				.25	YES			
			E3-BB	35				.27	NO			
A 86	1		J244-78	5				.15	NO			
			A18-8	37				.25	YES			
A 87	1		A18-4	37				.25	YES			
			J1-26	1				.15	NO			
A 88	1		J1-83	1				.15	NO			
			A12-2	43				.25	YES			
A 89	1		J1-84	1				.15	NO			
			A13-2	42				.25	YES			
A 90	1		J1-21	1				.15	NO			
			A14-2	41				.25	YES			

SIZE A	CODE IDENT NO. 99974	6900089
SCALE-NONE	REV LTR ~~F~~ G	SHEET 13 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1		J1-42 A15-2	1 40				.15 .25	NO YES			
A 92	1		J1-41 A16-2	1 39				.15 .25	NO YES			
A 93	1		J1-60 A17-2	1 38				.15 .25	NO YES			
A 94	1		J1-43 J244-18	1 5				.15 .15	NO NO			
A 95	1		J1-8 E4-88	1 6				.15 .29	NO NO			
A 96	1		A18-16 A17-23	37 38				.25 .25	YES YES			
A 97	1		A16-23 A17-23	39 38				.25 .25	YES YES			
A 98	1		A16-23 A15-23	39 40				.25 .25	YES YES			
A 99	1		A14-23 A15-23	41 40				.25 .25	YES YES			
A 100	1		A14-23 A13-23	41 42				.25 .25	YES YES			
A 101	1		A12-23 A13-23	43 42				.25 .25	YES YES			
A 102	1		A8-13 A9-38	13 14				.25 .25	YES YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 14 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1		A7-13 A8-38	12 13				.25 .25	YES YES			
A 104	1		A6-13 A7-38	11 12				.25 .25	YES YES			
A 105	1		A5-13 A6-38	10 11				.25 .25	YES YES			
A 106	1		A4-13 A5-38	9 10				.25 .25	YES YES			
A 107	1		A2-13 A3-38	7 8				.25 .25	YES YES			
A 108	1		J244-4 A12-4	5 43				.15 .25	NO YES			
A 109	1		J244-5 A12-42	5 43				.15 .25	NO YES			
A 110	1		J244-6 A12-17	5 43				.15 .25	NO YES			
A 111	1		J244-7 A12-21	5 43				.15 .25	NO YES			
A 112	1		J244-8 A13-4	5 42				.15 .25	NO YES			
A 113	1		J244-9 A13-42	5 42				.15 .25	NO YES			
A 114	1		J244-10 A13-17	5 42				.15 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 15 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 115	1		J244-11 A13-21	5 42				.15 .25	NO YES			
A 116	1		J244-12 A14-4	5 41				.15 .25	NO YES			
A 117	1		J244-13 A14-42	5 41				.15 .25	NO YES			
A 118	1		J244-14 A14-17	5 41				.15 .25	NO YES			
A 119	1		J244-15 A14-21	5 41				.15 .25	NO YES			
A 120	1		J244-24 A15-4	5 40				.15 .25	NO YES			
A 121	1		J244-25 A15-42	5 40				.15 .25	NO YES			
A 122	1		A4-38 A3-13	9 8				.25 .25	YES YES			
A 123	1		J244-26 A15-17	5 40				.15 .25	NO YES			
A 124	1		J244-27 A15-21	5 40				.15 .25	NO YES			
A 125	1		J244-28 A16-4	5 39				.15 .25	NO YES			
A 126	1		J244-29 A16-42	5 39				.15 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 16 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 127	1		J244-30 A16-17	5 39				.15 .25	NO YES			
A 128	1		J244-31 A16-21	5 39				.15 .25	NO YES			
A 129	1		J244-32 A17-4	5 38				.15 .25	NO YES			
A 130	1		J244-33 A17-42	5 38				.15 .25	NO YES			
A 131	1		J244-34 A17-17	5 38				.15 .25	NO YES			
A 132	1		J244-35 A17-21	5 38				.15 .25	NO YES			
A 133	1		J244-20 A9-40	5 14				.15 .25	NO YES			
A 134	1		J244-21 A9-32	5 14				.15 .25	NO YES			
A 135	1		J1-27 A18-5	1 37				.15 .25	NO YES			
A 136	1		J1-47 A18-1	1 37				.15 .25	NO YES			
A 137	1		A18-6 A9-19	37 14				.25 .25	YES YES			
A 138	1		A18-8 A9-31	37 14				.25 .25	YES YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 17 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 139	1		A18-2 A8-1	37 13				.25 .25	YES YES			
A 140	1		A18-4 A8-15	37 13				.25 .25	YES YES			
A 141	1		J1-81 A8-19	1 13				.15 .25	NO YES			
A 142	1		J1-56 A7-1	1 12				.15 .25	NO YES			
A 143	1		J1-80 A7-19	1 12				.15 .25	NO YES			
A 144	1		E4-88 A2-31	6 7				.29 .25	NO YES			
A 145	1		A8-31 A7-31	13 12				.25 .25	YES YES			
A 146	1		J1-55 A7-31	1 12				.15 .25	NO YES			
A 147	1		A8-17 J244-22	13 5				.25 .15	YES NO			
A 148	1		A8-9 J244-23	13 5				.25 .15	YES NO			
A 149	1		A8-40 J244-36	13 5				.25 .15	YES NO			
A 150	1		A8-32 J244-37	13 5				.25 .15	YES NO			

SIZE A	CODE IDENT NO. 99974	6900089	
SCALE-NONE	REV LTR G	SHEET 18 OF 25	

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WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 151	1		A7-17 J244-40	12 5				.25 .15	YES NO			
A 152	1		A7-9 J244-41	12 5				.25 .15	YES NO			
A 153	1		A7-40 J244-44	12 5				.25 .15	YES NO			
A 154	1		A7-32 J244-45	12 5				.25 .15	YES NO			
A 155	1		A18-14 E2-88	37 3				.25 .27	YES NO			
A 156	1		J1-52 E2-88	1 3				.15 .27	NO NO			
A 157	1		J244-39 E2-8	5 3				.15 .27	NO NO			
A 158	1		J244-43 E2-8	5 3				.15 .27	NO NO			
A 159	1		J244-47 E2-8	5 3				.15 .27	NO NO			
A 160	1		J1-31 J244-38	1 5				.15 .15	NO NO			
A 161	1		J1-30 J244-42	1 5				.15 .15	NO NO			
A 162	1		J1-51 J244-46	1 5				.15 .15	NO NO			

SIZE A	CODE IDENT NO. 99974	6900089	
SCALE-NONE	REV LTR G	SHEET 19 OF 25	

MIL 2084 9-65

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 163	1		J1-74 J244-60	1 5				.15 .15	NO NO			
A 164	1		J1-75 J244-61	1 5				.15 .15	NO NO			
A 165	1		J1-2 A6-1	1 11				.15 .25	NO YES			
A 166	1		J1-7 A6-19	1 11				.15 .25	NO YES			
A 167	1		J1-19 A5-1	1 10				.15 .25	NO YES			
A 168	1		J1-20 A5-19	1 10				.15 .25	NO YES			
A 169	1		J1-39 A4-1	1 9				.15 .25	NO YES			
A 170	1		J1-38 A4-19	1 9				.15 .25	NO YES			
A 171	1		J1-37 A3-1	1 8				.15 .25	NO YES			
A 172	1		J1-61 A3-19	1 8				.15 .25	NO YES			
A 173	1		J1-62 A2-1	1 7				.15 .25	NO YES			
A 174	1		J1-63 A2-19	1 7				.15 .25	NO YES			

SIZE A	CODE IDENT NO. 99974	6900089	
SCALE-NONE	REV LTR G	SHEET 20 OF 25	

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WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 175	1		J244-48 A6-17	5 11				.15 .25	NO YES			
A 176	1		J244-49 A6-9	5 11				.15 .25	NO YES			
A 177	1		J244-50 A6-40	5 11				.15 .25	NO YES			
A 178	1		J244-51 A6-32	5 11				.15 .25	NO YES			
A 179	1		J244-52 A5-17	5 10				.15 .25	NO YES			
A 180	1		J244-53 A5-9	5 10				.15 .25	NO YES			
A 181	1		J244-54 A5-40	5 10				.15 .25	NO YES			
A 182	1		J244-55 A5-32	5 10				.15 .25	NO YES			
A 183	1		J244-56 A4-17	5 9				.15 .25	NO YES			
A 184	1		J244-57 A4-9	5 9				.15 .25	NO YES			
A 185	1		J244-58 A4-40	5 9				.15 .25	NO YES			
A 186	1		J244-59 A4-32	5 9				.15 .25	NO YES			

SIZE A	CODE IDENT NO. 99974	6900089	
SCALE-NONE	REV LTR G	SHEET 21 OF 25	

MIL 2084 9-65

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 187	1		J244-62 A3-17	5 8				.15 .25	NO YES			
A 188	1		J244-63 A3-9	5 8				.15 .25	NO YES			
A 189	1		J244-64 A3-40	5 8				.15 .25	NO YES			
A 190	1		J244-65 A3-32	5 8				.15 .25	NO YES			
A 191	1		J244-66 A2-17	5 7				.15 .25	NO YES			
A 192	1		J244-67 A2-9	5 7				.15 .25	NO YES			
A 193	1		J244-68 A2-40	5 7				.15 .25	NO YES			
A 194	1		J244-69 A2-32	5 7				.15 .25	NO YES			
A 195	1		J1-85 E1	1 17				.15 .25	NO NO		14	
A 196	1		J1-82 A24-3	1 31				.15 .25	NO YES			
A 197	1		J1-57 J244-71	1 5				.15 .15	NO NO			
A 198	1		J1-58 A24-5	1 31				.15 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 22 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1		J1-34 J244-73	1 5				.15 .15	NO NO			
A 200	1		J1-35 A24-7	1 31				.15 .25	NO YES			
A 201	1		J1-17 J244-75	1 5				.15 .15	NO NO			
A 202	1		A24-4 J244-70	31 5				.25 .15	YES NO			
A 203	1		A24-6 J244-72	31 5				.25 .15	YES NO			
A 204	1		A24-8 J244-74	31 5				.25 .15	YES NO			
A 205	1		E4-8 A6-15	6 11				.29 .25	NO YES			
A 206	1		E4-8 A6-31	6 11				.29 .25	NO YES			
A 207	1		E4-8 A5-15	6 10				.29 .25	NO YES			
A 208	1		E4-8 A5-31	6 10				.29 .25	NO YES			
A 209	1		E4-8 A4-15	6 9				.29 .25	NO YES			
A 210	1		E4-8 A4-31	6 9				.29 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 23 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 211	1		E4-8 A3-15	6 8				.29 .25	NO YES			
A 212	1		E4-8 A3-31	6 8				.29 .25	NO YES			
A 213	1		E4-8B A2-15	6 7				.29 .25	NO YES			
A 214	1		A14-37 E4-8B	41 6				.25 .29	YES NO			
A 215	1		A22K1-8 A12-23	24 43				.25 .25	YES YES		8	

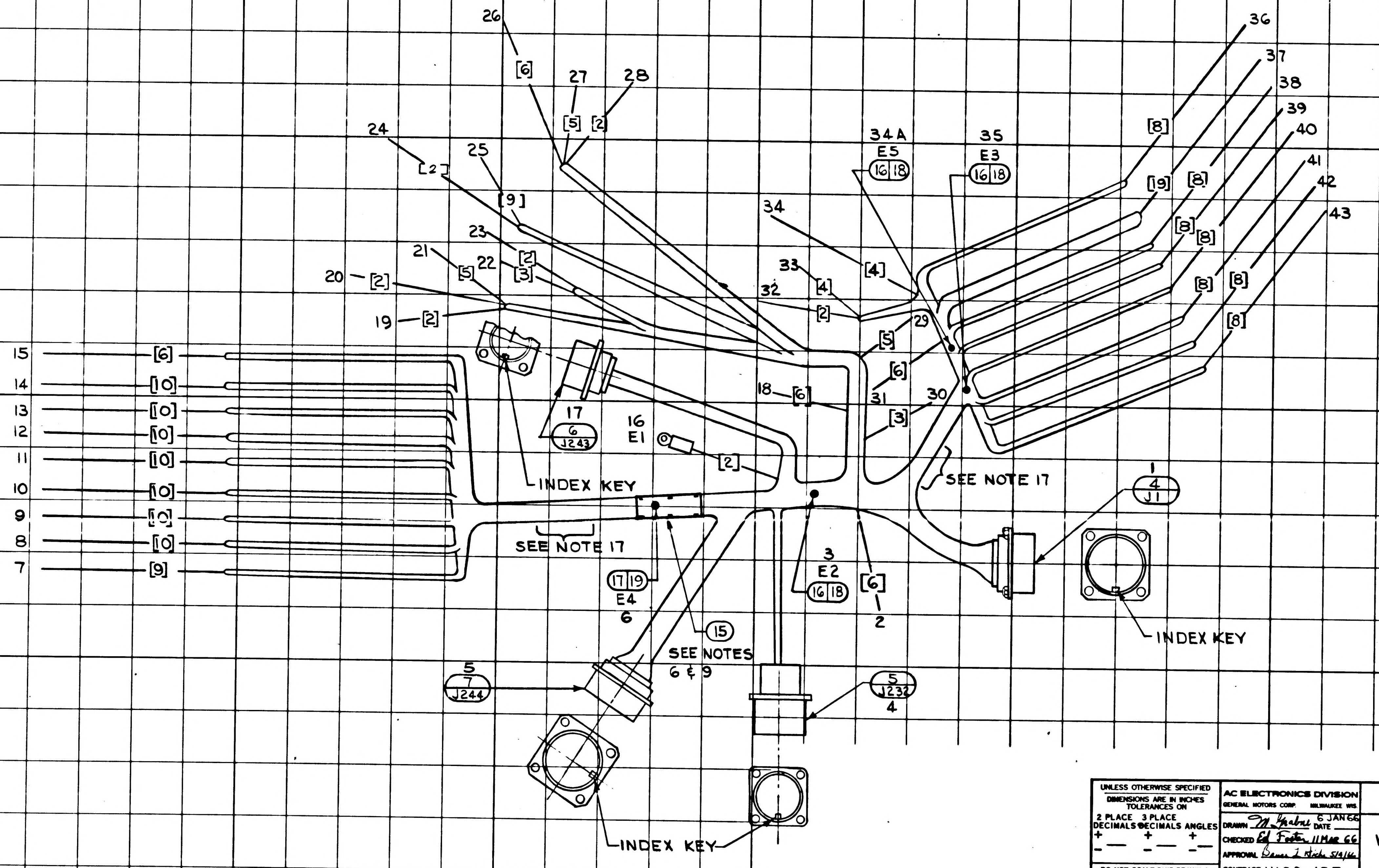
SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 24 OF 25

MIL 2084 9-65

9 6800069

SYM	ZONE	REVISIONS 28598 DESCRIPTION	CHG NO	DATE	APPD

SEE SHEET 1 FOR REVISION RECORD



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J244
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J232
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INDEX KEY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN M. Grabne 6 JAN 66 DATE CHECKED Ed Foster 11 MAR 66 APPROVAL Dave L. Hicks 5/4/66 CONTRACT NAS9-497	WIRING HARNESS "A"	
MATERIAL —	NASA APPROVAL 5/4/66	CODE IDENT NO 99974	SIZE D
APPROVAL	MIT APPROVAL	SCALE FULL	6900089 SHEET 25 OF 25

MX 109894

APPLICATION	
NEXT ASSY	USED ON
6900088-011	6900088-011

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV A WITH CHANGE PER MXC 210438	6 APR 66	J J J
C	REVISED PER MXC 210874	18 APR 66	RP
D	REVISED PER MXC 210947	22-APR 66	M G.
E	REVISED PER MXC 211543	27 APR 66	L.G.C
F	REVISED PER MXC 211822	28 APR 66	RWH
(M) G	INITIAL RELEASE CLASS A PER TDRR 28598	2 MAY 66	EF
H	REVISED PER TDRR 29972	14 JULY 66	J.A.C

Charleston 15 MAR 66

REV	G	H
SHEET	24	25

REV STATUS OF SHEETS																							
REV	H	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
D.O. 61601

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN M. Grabner 6 JAN 66
DAY MO YR
CHECKER Ed Foster 11 MAR 66
ENGINEER J L Mitton
APPROVAL Bruce I Hecker 5/4/66
CONTR NO. NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

SIZE A
CODE IDENT. NO 99974
6900089
SCALE NONE
SHEET 1 OF 25

MIL 1377A6 12-65

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
4	NUMBER IN BRACKETS ARE QUANTITIES OF LEADS
5	SOLDER PER ND1002071 USING ITEM 20 OR ITEMS 22 AND 21.
6	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER
7	LENGTHS SPECIFIED ARE BEFORE ACCESSORIES ARE ATTACHED.
8	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER - A - SHIELD LEAD ON FROM END L - WHITE WITH BLUE TRACER. R - WHITE WITH RED TRACER.
9	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 3.
10	APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
11	SPACING OF LEAD IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
12	SPIRALLING OF LEAD IDENTIFICATION IS ALLOWED.
13	ASSEMBLE PER ND1002032.
14	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 2 OF 25

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
15	GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING. UNLESS OTHERWISE SPECIFIED HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.
16	ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.
17	DO NOT SPOT TIE IN THIS AREA.
18	SPOT TIE AS REQUIRED USING ITEM 3.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 3 OF 25

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900089-001	WIRE, ND1002181 TYPE I CLASS I 24AWG WHITE 400 FEET TOTAL LENGTH
	2	1	6900089-002	WIRE, ND1002181 TYPE II CLASS 4, 24AWG WHT/BLU, WHT/RED 2 FEET TOTAL LENGTH
3	3	70	1897406-005	STRAP, CABLE, ADJUSTABLE
3	4	1	6900132	CONNECTOR, RECEPTACLE, ELECTRICAL (INSEPARABLE ASSEMBLY)
	5	1	MS3102R14S-7S(C)	(1896916-107) CONNECTOR, RECEPTACLE
3	6	1	1897252-109	CONNECTOR, RECEPTACLE
3	7	1	1897247-001	CONNECTOR, RECEPTACLE
3	8	44	1015864-109	INSULATION-SLEEVING, ELECTRICAL
3	9	3	1015864-167	INSULATION-SLEEVING, ELECTRICAL
3	10	6	1015864-082	INSULATION-SLEEVING, ELECTRICAL
3	11	4	1015864-105	INSULATION-SLEEVING, ELECTRICAL
3	12	4	1010490-228	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINK
3	13	2	1010763- 2	SOLDER SLEEVE
3	14	2	1015902- 45	TERMINAL LUG
3	15	1	1016128-011	BAND IDENTIFICATION
3	16	3	1016006-001	SPLICE-REDUCER
3	17	1	1016006-002	SPLICE-REDUCER

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 4 OF 25

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
3	18	3	1010490-198	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
3	19	1	1010490-258	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
	20	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
	21	AR	MIL-F 14256 TYPE A OR W	FLUX (ES2798)
	22	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 5 OF 25

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1		J243-31 A21-1	16 26				.15 .25	NO YES			
A 2	1		J243-30 A21-2	16 26				.15 .25	NO YES			
A 3	1		J243-29 A21-3	16 28				.15 .25	NO YES			
A 4	1		J243-14 A21-4	16 28				.15 .25	NO YES			
A 5	1		J243-13 A21-5	16 26				.15 .25	NO YES			
A 6	1		J243-28 A21-6	16 26				.15 .25	NO YES			
A 7	1		A21K1-3 S2-5	26 2				.25 .25	YES YES		8 10	
A 8	1		A21K1-3 J1-78	26 1				.25 .15	YES NO		8	
A 9	1		A21K2-3 S2-4	27 2				.25 .25	YES YES		8 10	
A 10	1		A21K2-3 J1-32	27 1				.25 .15	YES NO		8	
A 11	1		A21K3-3 S2-3	27 2				.25 .25	YES YES		8 10	
A 12	1		A21K3-3 J1-33	27 1				.25 .15	YES NO		8	

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G	SHEET 6 OF 25	

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		A24K1-3 S2-2	33 2				.25 .25	YES YES		8 10	
A 14	1		A24K1-3 A18-10	33 37				.25 .25	YES YES		8	
A 15	1		A21K3-8 A24K1-2	27 33				.25 .25	YES YES		8 8	
A 16	1		J243-5 A24-1	16 32				.15 .25	NO YES			
A 17	1		J243-6 A24-2	16 32				.15 .25	NO YES			
A 18	1		A24K1-8 S2-6	33 2				.25 .25	YES YES		8 10	
A 19	1		S2-C1 A9-1	2 14				.25 .25	YES YES		10	
A 20	1		J232-A A10-3	4 15				.25 .25	YES YES		9	
A 21	1		J232-B A10-1	4 15				.25 .25	YES YES		9	
A 22	1		A10-7 A9-17	15 14				.25 .25	YES YES			
A 23	1		A10-21 A9-9	15 14				.25 .25	YES YES			
A 24	1		A10-19 A9-13	15 14				.25 .25	YES YES			

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G	SHEET 7 OF 25	

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		A9-15 A18-12	14 37				.25 .25	YES YES			
A 26	1		A20-17 A18-12	36 37				.25 .25	YES YES			
A 27	1		A20-22 A18-10	36 37				.25 .25	YES YES			
A 28	1		S1-3 A10-19	30 15				.25 .25	YES YES		8	
A 29	1		A18-9 J1-65	37 1				.25 .15	YES NO			
A 30	1		A18-24 E5-BB	37 34A				.25 .26	YES NO			
A 31	1		J1-79 E5-B	1 34A				.15 .26	NO NO			
A 32	1		J1-54 E5-B	1 34A				.15 .26	NO NO			
A 33	1		J1-16 E5-B	1 34A				.15 .26	NO NO			
A 34	1		J1-64 E5-B	1 34A				.15 .26	NO NO			
A 35	1		J1-45 A20-75	1 36				.15 .25	NO YES			
A 36	1		J1-69 A20-78	1 36				.15 .25	NO YES			

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G	SHEET 8 OF 25	

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		J244-76 A20-3	5 36				.15 .25	NO YES			
A 38	1		J244-77 A20-14	5 36				.15 .25	NO YES			
A 39	1		J1-66 XF1-2	1 34				.15 .25	NO YES		 11	
A 40	1		J1-67 XF1-2	1 34				.15 .25	NO YES		 11	
A 41	1		J1-68 XF1-2	1 34				.15 .25	NO YES		 11	
A 42	1		S1-2 XF1-1	30 34				.25 .25	YES YES		8 11	
A 43	1		A20-81 A18-16	36 37				.25 .25	YES YES			
A 44	1		J1-6 S3-1	1 29				.15 .25	NO YES		 8	
A 45	1		A20-81 S1-3	36 30				.25 .25	YES YES		 8	
A 46	1		S3-2 A22K1-3	29 24				.25 .25	YES YES		8 8	
A 47	1		J243-35 A22K3-1	16 25				.15 .25	NO YES		 8	
A 48	1		J1-59 A22K2-3	1 25				.15 .25	NO YES		 8	

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G	SHEET 9 OF 25	

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WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		J243-22 A22K2-4	16 25				.15 .25	NO YES		 8	
A 50	1		J243-8 A22K2-8	16 25				.15 .25	NO YES		 8	
A 51	1		J243-18 A22K3-5	16 25				.15 .25	NO YES		 8	
A 52	1		J243-39 A22K3-4	16 25				.15 .25	NO YES		 8	
A 53	1		J243-20 A22K3-8	16 25				.15 .25	NO YES		 8	
A 54	1		J1-18 A22K3-7	1 25				.15 .25	NO YES		 8	
A 55	1		J1-36 A22K3-3	1 25				.15 .25	NO YES		 8	
A 56	1		J232-C E1	4 17				.25 .25	YES NO		9 14	
A 57	1		A18-13 A23K1-8	37 22				.25 .25	YES YES		 8	
A 58	1		A18-17 A23K3-8	37 21				.25 .25	YES YES		 8	
A 59	1		J1-76 S4-1	1 18				.15 .25	NO YES		 8	
A 60	1		A23K1-3 S4-1	22 18				.25 .25	YES YES		8 8	

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR ~~8~~ ~~E~~ G | SHEET 10 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		S4-2 A23K1-2	18 22				.25 .25	YES YES		8 8	
A 62	1		J243-17 A23-1	16 23				.15 .25	NO YES			
A 63	1		J243-34 A23-2	16 23				.15 .25	NO YES			
A 64	1		J1-53 S5-1	1 18				.15 .25	NO YES		 8	
A 65	1		A23K2-3 S5-1	21 18				.25 .25	YES YES		8 8	
A 66	1		A23K2-2 S5-2	21 18				.25 .25	YES YES		8 8	
A 67	1		J243-33 A23-3	16 19				.15 .25	NO YES			
A 68	1		J243-16 A23-4	16 19				.15 .25	NO YES			
A 69	1		J1-77 S6-1	1 29				.15 .25	NO YES		 8	
A 70	1		A23K3-3 S6-1	21 29				.25 .25	YES YES		8 8	
A 71	1		A23K3-2 S6-2	21 29				.25 .25	YES YES		8 8	
A 72	1		J243-15 A23-5	16 20				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR G | SHEET 11 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		J243-32 A23-6	16 20				.15 .25	NO YES			
A 74	2				3.30 3.30	3.00 3.00				A,6B B,7	13, 12 12	
A 74A	1		SHLD OFA74 J1-48	 1				.15 .15	NO NO			
A 74L			J1-72 J243-42	1 16				.15 .15	NO NO			
A 74R			J1-73 J243-24	1 16				.15 .15	NO NO			
A 75	2				3.80 3.30	3.50 3.00				A,6B B,7	13, 12 12	
A 75A	1		SHLD OFA75 J1-46	 1				.15 .15	NO NO			
A 75L			J1-70 J243-43	1 16				.15 .15	NO NO			
A 75R			J1-71 J243-44	1 16				.15 .15	NO NO			
A 76	1		J1-24 J244-1	1 5				.15 .15	NO NO			
A 77	1		J1-25 J244-79	1 5				.15 .15	NO NO			
A 78	1		J1-23 E3-B	1 35				.15 .27	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR G | SHEET 12 OF 25

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1		J244-2 E3-B	5 35				.15 .27	NO NO			
A 80	1		J244-19 E3-B	5 35				.15 .27	NO NO			
A 81	1		A12-37 E3-B	43 35				.25 .27	YES NO			
A 82	1		A13-37 E3-B	42 35				.25 .27	YES NO			
A 83	1		A15-37 E3-BB	40 35				.25 .27	YES NO			
A 84	1		A16-37 E3-BB	39 35				.25 .27	YES NO			
A 85	1		A17-37 E3-BB	38 35				.25 .27	YES NO			
A 86	1		J244-78 A18-8	5 37				.15 .25	NO YES			
A 87	1		A18-4 J1-26	37 1				.25 .15	YES NO			
A 88	1		J1-83 A12-2	1 43				.15 .25	NO YES			
A 89	1		J1-84 A13-2	1 42				.15 .25	NO YES			
A 90	1		J1-21 A14-2	1 41				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR G | SHEET 13 OF 25

WIRING HARNESS A

6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1		J1-42	1				.15	NO			
			A15-2	40				.25	YES			
A 92	1		J1-41	1				.15	NO			
			A16-2	39				.25	YES			
A 93	1		J1-60	1				.15	NO			
			A17-2	38				.25	YES			
A 94	1		J1-43	1				.15	NO			
			J244-18	5				.15	NO			
A 95	1		J1-8	1				.15	NO			
			E4-88	6				.29	NO			
A 96	1		A18-16	37				.25	YES			
			A17-23	38				.25	YES			
A 97	1		A16-23	39				.25	YES			
			A17-23	38				.25	YES			
A 98	1		A16-23	39				.25	YES			
			A15-23	40				.25	YES			
A 99	1		A14-23	41				.25	YES			
			A15-23	40				.25	YES			
A 100	1		A14-23	41				.25	YES			
			A13-23	42				.25	YES			
A 101	1		A12-23	43				.25	YES			
			A13-23	42				.25	YES			
A 102	1		A8-13	13				.25	YES			
			A9-38	14				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 14 OF 25

MIL 2084 9-65

WIRING HARNESS A

6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1		A7-13	12				.25	YES			
			A8-38	13				.25	YES			
A 104	1		A6-13	11				.25	YES			
			A7-38	12				.25	YES			
A 105	1		A5-13	10				.25	YES			
			A6-38	11				.25	YES			
A 106	1		A4-13	9				.25	YES			
			A5-38	10				.25	YES			
A 107	1		A2-13	7				.25	YES			
			A3-38	8				.25	YES			
A 108	1		J244-4	5				.15	NO			
			A12-4	43				.25	YES			
A 109	1		J244-5	5				.15	NO			
			A12-42	43				.25	YES			
A 110	1		J244-6	5				.15	NO			
			A12-17	43				.25	YES			
A 111	1		J244-7	5				.15	NO			
			A12-21	43				.25	YES			
A 112	1		J244-8	5				.15	NO			
			A13-4	42				.25	YES			
A 113	1		J244-9	5				.15	NO			
			A13-42	42				.25	YES			
A 114	1		J244-10	5				.15	NO			
			A13-17	42				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 15 OF 25

MIL 2084 9-65

WIRING HARNESS A

6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 115	1		J244-11	5				.15	NO			
			A13-21	42				.25	YES			
A 116	1		J244-12	5				.15	NO			
			A14-4	41				.25	YES			
A 117	1		J244-13	5				.15	NO			
			A14-42	41				.25	YES			
A 118	1		J244-14	5				.15	NO			
			A14-17	41				.25	YES			
A 119	1		J244-15	5				.15	NO			
			A14-21	41				.25	YES			
A 120	1		J244-24	5				.15	NO			
			A15-4	40				.25	YES			
A 121	1		J244-25	5				.15	NO			
			A15-42	40				.25	YES			
A 122	1		A4-38	9				.25	YES			
			A3-13	8				.25	YES			
A 123	1		J244-26	5				.15	NO			
			A15-17	40				.25	YES			
A 124	1		J244-27	5				.15	NO			
			A15-21	40				.25	YES			
A 125	1		J244-28	5				.15	NO			
			A16-4	39				.25	YES			
A 126	1		J244-29	5				.15	NO			
			A16-42	39				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 16 OF 25

MIL 2084 9-65

WIRING HARNESS A

6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 127	1		J244-30	5				.15	NO			
			A16-17	39				.25	YES			
A 128	1		J244-31	5				.15	NO			
			A16-21	39				.25	YES			
A 129	1		J244-32	5				.15	NO			
			A17-4	38				.25	YES			
A 130	1		J244-33	5				.15	NO			
			A17-42	38				.25	YES			
A 131	1		J244-34	5				.15	NO			
			A17-17	38				.25	YES			
A 132	1		J244-35	5				.15	NO			
			A17-21	38				.25	YES			
A 133	1		J244-20	5				.15	NO			
			A9-40	14				.25	YES			
A 134	1		J244-21	5				.15	NO			
			A9-32	14				.25	YES			
A 135	1		J1-27	1				.15	NO			
			A18-5	37				.25	YES			
A 136	1		J1-47	1				.15	NO			
			A18-1	37				.25	YES			
A 137	1		A18-6	37				.25	YES			
			A9-19	14				.25	YES			
A 138	1		A18-8	37				.25	YES			
			A9-31	14				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 17 OF 25

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 139	1		A18-2 A8-1	37 13				.25 .25	YES YES			
A 140	1		A18-4 A8-15	37 13				.25 .25	YES YES			
A 141	1		J1-81 A8-19	1 13				.15 .25	NO YES			
A 142	1		J1-56 A7-1	1 12				.15 .25	NO YES			
A 143	1		J1-80 A7-19	1 12				.15 .25	NO YES			
A 144	1		E4-BB A2-31	6 7				.29 .25	NO YES			
A 145	1		A8-31 A7-31	13 12				.25 .25	YES YES			
A 146	1		J1-55 A7-31	1 12				.15 .25	NO YES			
A 147	1		A8-17 J244-22	13 5				.25 .15	YES NO			
A 148	1		A8-9 J244-23	13 5				.25 .15	YES NO			
A 149	1		A8-40 J244-36	13 5				.25 .15	YES NO			
A 150	1		A8-32 J244-37	13 5				.25 .15	YES NO			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~B~~ G
SHEET 18 OF 25

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 151	1		A7-17 J244-40	12 5				.25 .15	YES NO			
A 152	1		A7-9 J244-41	12 5				.25 .15	YES NO			
A 153	1		A7-40 J244-44	12 5				.25 .15	YES NO			
A 154	1		A7-32 J244-45	12 5				.25 .15	YES NO			
A 155	1		A18-14 E2-BB	37 3				.25 .27	YES NO			
A 156	1		J1-52 E2-BB	1 3				.15 .27	NO NO			
A 157	1		J244-39 E2-B	5 3				.15 .27	NO NO			
A 158	1		J244-43 E2-B	5 3				.15 .27	NO NO			
A 159	1		J244-47 E2-B	5 3				.15 .27	NO NO			
A 160	1		J1-31 J244-38	1 5				.15 .15	NO NO			
A 161	1		J1-30 J244-42	1 5				.15 .15	NO NO			
A 162	1		J1-51 J244-46	1 5				.15 .15	NO NO			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~B~~ G
SHEET 19 OF 25

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 163	1		J1-74 J244-60	1 5				.15 .15	NO NO			
A 164	1		J1-75 J244-61	1 5				.15 .15	NO NO			
A 165	1		J1-2 A6-1	1 11				.15 .25	NO YES			
A 166	1		J1-7 A6-19	1 11				.15 .25	NO YES			
A 167	1		J1-19 A5-1	1 10				.15 .25	NO YES			
A 168	1		J1-20 A5-19	1 10				.15 .25	NO YES			
A 169	1		J1-39 A4-1	1 9				.15 .25	NO YES			
A 170	1		J1-38 A4-19	1 9				.15 .25	NO YES			
A 171	1		J1-37 A3-1	1 8				.15 .25	NO YES			
A 172	1		J1-61 A3-19	1 8				.15 .25	NO YES			
A 173	1		J1-62 A2-1	1 7				.15 .25	NO YES			
A 174	1		J1-63 A2-19	1 7				.15 .25	NO YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~B~~ G
SHEET 20 OF 25

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 175	1		J244-48 A6-17	5 11				.15 .25	NO YES			
A 176	1		J244-49 A6-9	5 11				.15 .25	NO YES			
A 177	1		J244-50 A6-40	5 11				.15 .25	NO YES			
A 178	1		J244-51 A6-32	5 11				.15 .25	NO YES			
A 179	1		J244-52 A5-17	5 10				.15 .25	NO YES			
A 180	1		J244-53 A5-9	5 10				.15 .25	NO YES			
A 181	1		J244-54 A5-40	5 10				.15 .25	NO YES			
A 182	1		J244-55 A5-32	5 10				.15 .25	NO YES			
A 183	1		J244-56 A4-17	5 9				.15 .25	NO YES			
A 184	1		J244-57 A4-9	5 9				.15 .25	NO YES			
A 185	1		J244-58 A4-40	5 9				.15 .25	NO YES			
A 186	1		J244-59 A4-32	5 9				.15 .25	NO YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~B~~ G
SHEET 21 OF 25

WIRING HARNESS A 6900089 G ←

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 187	1		J244-62	5				.15	NO			
			A3-17	8				.25	YES			
A 188	1		J244-63	5				.15	NO			
			A3-9	8				.25	YES			
A 189	1		J244-64	5				.15	NO			
			A3-40	8				.25	YES			
A 190	1		J244-65	5				.15	NO			
			A3-32	8				.25	YES			
A 191	1		J244-66	5				.15	NO			
			A2-17	7				.25	YES			
A 192	1		J244-67	5				.15	NO			
			A2-9	7				.25	YES			
A 193	1		J244-68	5				.15	NO			
			A2-40	7				.25	YES			
A 194	1		J244-69	5				.15	NO			
			A2-32	7				.25	YES			
A 195	1		J1-85	1				.15	NO			
			E1	17				.25	NO		14	
A 196	1		J1-82	1				.15	NO			
			A24-3	31				.25	YES			
A 197	1		J1-57	1				.15	NO			
			J244-71	5				.15	NO			
A 198	1		J1-58	1				.15	NO			
			A24-5	31				.25	YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~F~~ G
SHEET 22 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ←

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1		J1-34	1				.15	NO			
			J244-73	5				.15	NO			
A 200	1		J1-35	1				.15	NO			
			A24-7	31				.25	YES			
A 201	1		J1-17	1				.15	NO			
			J244-75	5				.15	NO			
A 202	1		A24-4	31				.25	YES			
			J244-70	5				.15	NO			
A 203	1		A24-6	31				.25	YES			
			J244-72	5				.15	NO			
A 204	1		A24-8	31				.25	YES			
			J244-74	5				.15	NO			
A 205	1		E4-B	6				.29	NO			
			A6-15	11				.25	YES			
A 206	1		E4-B	6				.29	NO			
			A6-31	11				.25	YES			
A 207	1		E4-B	6				.29	NO			
			A5-15	10				.25	YES			
A 208	1		E4-B	6				.29	NO			
			A5-31	10				.25	YES			
A 209	1		E4-B	6				.29	NO			
			A4-15	9				.25	YES			
A 210	1		E4-B	6				.29	NO			
			A4-31	9				.25	YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~F~~ G
SHEET 23 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G F8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 211	1		E4-B	6				.29	NO			
			A3-15	8				.25	YES			
A 212	1		E4-B	6				.29	NO			
			A3-31	8				.25	YES			
A 213	1		E4-BB	6				.29	NO			
			A2-15	7				.25	YES			
A 214	1		A14-37	41				.25	YES			
			E4-BB	6				.29	NO			
A 215	1		A22K1-8	24				.25	YES		8	
			A12-23	43				.25	YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR ~~8~~ ~~F~~ G
SHEET 24 OF 25

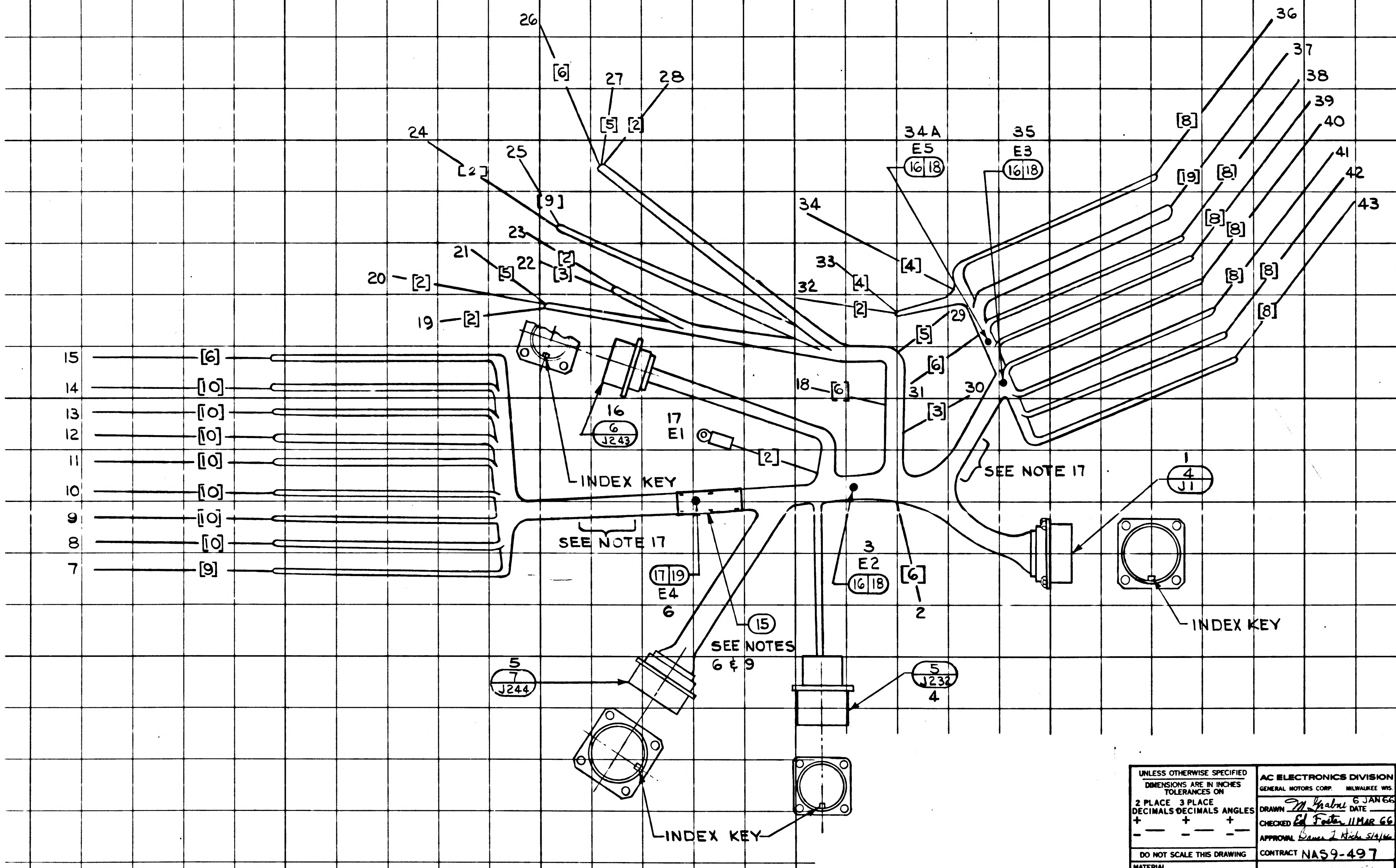
MIL 2084 9-65

H 6800069

REVISIONS 28599

SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO		

SEE SHEET 1 FOR REVISION RECORD



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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN M. Grabne DATE 6 JAN 66 CHECKED Ed Foster 11 MAR 66 APPROVAL Bruce L Hicks 5/4/66 CONTRACT NAS9-497	WIRING HARNESS "A"
MATERIAL — APPROVAL	NASA APPROVAL [illegible] MIT APPROVAL [illegible]	CODE IDENT NO 99974 · SIZE D · 6900089 SCALE FULL · SHEET 25 OF 25

MX 109894

APPLICATION	
NEXT ASSY	USED ON
6900088 011	6900083 011

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV A WITH CHANGE PER MXC 210438	6 APR 66	JJJ
C	REVISED PER MXC 210874	18 APR 66	RP
D	REVISED PER MXC 210947	22-APR 66	M.
E	REVISED PER MXC 211543	27 APR 66	LGC
F	REVISED PER MXC 211822	28 APR 66	DM RWH
(M) G	INITIAL RELEASE CLASS A PER TDRR 23546	2 MAY 66	
H	REVISED PER TDRR 29972	14 JULY 66	JAC
J	REVISED PER TDRR 30219	27 JUL 66	

15 MAR 66

REV	G	H																					
SHEET	24	25																					
REV STATUS OF SHEETS — REV	J	G	G	J	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
D.O. 61601

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN Grabner 6 JAN 66
DA MO YR
CHECKER Ed Foster 11 MAR 66
ENGINEER
APPROVAL Bruce Kach 5/4/66
CONTR NO. NAS 9-497

NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

SIZE	CODE IDENT. NO	
A	99974	6900089
SCALE NONE		SHEET 1 OF 25

MIL 1377A6 12-65

NOTE GENERAL NOTES

NUMBER DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

4 NUMBER IN BRACKETS ARE QUANTITIES OF LEADS

5 SOLDER PER ND1002071 USING ITEM 20 OR ITEMS 22 AND 21.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER

7 LENGTHS SPECIFIED ARE BEFORE ACCESSORIES ARE ATTACHED.

8 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - SHIELD LEAD ON FROM END
L - WHITE WITH BLUE TRACER.
R - WHITE WITH RED TRACER.

9 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 3.

10 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

11 SPACING OF LEAD IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

12 SPIRALLING OF LEAD IDENTIFICATION IS ALLOWED.

13 ASSEMBLE PER ND1002032.

14 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.

SIZE	CODE IDENT NO	
A	99974	6900089
SCALE-NONE	REV LTR	SHEET 2 OF 25

NOTE GENERAL NOTES

NUMBER DESCRIPTION

15 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

16 ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.

17 DO NOT SPOT TIE IN THIS AREA.

18 SPOT TIE AS REQUIRED USING ITEM 3.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 3 OF 25

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900089-001	WIRE, ND1002181 TYPE I CLASS 1 24AWG WHITE 450 FEET TOTAL LENGTH
	2	1	6900089-002	WIRE, ND1002181 TYPE II CLASS 4, 24AWG WHT/BLU, WHT/RED 2 FEET TOTAL LENGTH
3	3	70	1897406-005	STRAP, CABLE, ADJUSTABLE
3	4	1	6900132	CONNECTOR, RECEPTACLE, ELECTRICAL (INSEPARABLE ASSEMBLY)
	5	1	MS3102R14S-7S(C)	(1996916-107) CONNECTOR, RECEPTACLE
3	6	1	1897252-109	CONNECTOR, RECEPTACLE
3	7	1	1897247-001	CONNECTOR, RECEPTACLE
3	8	44	1015864-079	INSULATION-SLEEVING, ELECTRICAL
3	9	3	1015864-167	INSULATION-SLEEVING, ELECTRICAL
3	10	6	1015864-082	INSULATION-SLEEVING, ELECTRICAL
3	11	4	1015864-105	INSULATION-SLEEVING, ELECTRICAL
3	12	4	1010490-228	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINK
3	13	2	1010763- 2	SOLDER SLEEVE
3	14	2	1015902- 45	TERMINAL LUG
3	15	1	1016128-011	BAND IDENTIFICATION
3	16	3	1016006-001	SPLICE-REDUCER
3	17	1	1016006-002	SPLICE-REDUCER

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR J	SHEET 4 OF 25

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
3	18	3	1010490-198	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
3	19	1	1010490-258	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
	20	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
	21	AR	MIL-F 14256 TYPE A OR W	FLUX (ES2798)
	22	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 5 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1		J243-31 A21-1	16 26				.15 .25	NO YES			
A 2	1		J243-30 A21-2	16 26				.15 .25	NO YES			
A 3	1		J243-29 A21-3	16 28				.15 .25	NO YES			
A 4	1		J243-14 A21-4	16 28				.15 .25	NO YES			
A 5	1		J243-13 A21-5	16 26				.15 .25	NO YES			
A 6	1		J243-28 A21-6	16 26				.15 .25	NO YES			
A 7	1		A21K1-3 S2-5	26 2				.25 .25	YES YES		8 10	
A 8	1		A21K1-3 J1-78	26 1				.25 .15	YES NO		8	
A 9	1		A21K2-3 S2-4	27 2				.25 .25	YES YES		8 10	
A 10	1		A21K2-3 J1-32	27 1				.25 .15	YES NO		8	
A 11	1		A21K3-3 S2-3	27 2				.25 .25	YES YES		8 10	
A 12	1		A21K3-4 J1-33	27 1				.25 .15	YES NO		8	

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 6 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		A24K1-3 S2-2	33 2				.25 .25	YES YES		8 10	
A 14	1		A24K1-3 A18-10	33 37				.25 .25	YES YES		8	
A 15	1		A21K3-8 A24K1-2	27 33				.25 .25	YES YES		8 8	
A 16	1		J243-5 A24-1	16 32				.15 .25	NO YES			
A 17	1		J243-6 A24-2	16 32				.15 .25	NO YES			
A 18	1		A24K1-8 S2-6	33 2				.25 .25	YES YES		8 10	
A 19	1		S2-C1 A9-1	2 14				.25 .25	YES YES		10	
A 20	1		J232-A A10-3	4 15				.25 .25	YES YES		9	
A 21	1		J232-B A10-1	4 15				.25 .25	YES YES		9	
A 22	1		A10-7 A9-17	15 14				.25 .25	YES YES			
A 23	1		A10-21 A9-9	15 14				.25 .25	YES YES			
A 24	1		A10-19 A9-13	15 14				.25 .25	YES YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 7 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		A9-15 A18-12	14 37				.25 .25	YES YES			
A 26	1		A20-17 A18-12	36 37				.25 .25	YES YES			
A 27	1		A20-22 A18-10	36 37				.25 .25	YES YES			
A 28	1		S1-3 A10-19	30 15				.25 .25	YES YES		8	
A 29	1		A18-9 J1-65	37 1				.25 .15	YES NO			
A 30	1		A18-24 E5-BB	37 34A				.25 .26	YES NO			
A 31	1		J1-79 E5-B	1 34A				.15 .26	NO NO			
A 32	1		J1-54 E5-8	1 34A				.15 .26	NO NO			
A 33	1		J1-16 E5-B	1 34A				.15 .26	NO NO			
A 34	1		J1-64 E5-B	1 34A				.15 .26	NO NO			
A 35	1		J1-45 A20-75	1 36				.15 .25	NO YES			
A 36	1		J1-69 A20-78	1 36				.15 .25	NO YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 8 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		J244-76 A20-3	5 36				.15 .25	NO YES			
A 38	1		J244-77 A20-14	5 36				.15 .25	NO YES			
A 39	1		J1-66 XF1-2	1 34				.15 .25	NO YES		11	
A 40	1		J1-67 XF1-2	1 34				.15 .25	NO YES		11	
A 41	1		J1-68 XF1-2	1 34				.15 .25	NO YES		11	
A 42	1		S1-2 XF1-1	30 34				.25 .25	YES YES		8 11	
A 43	1		A20-91 A18-16	36 37				.25 .25	YES YES			
A 44	1		J1-6 S3-1	1 29				.15 .25	NO YES		8	
A 45	1		A20-81 S1-3	36 30				.25 .25	YES YES		8	
A 46	1		S3-2 A22K1-3	29 24				.25 .25	YES YES		8 8	
A 47	1		J243-35 A22K3-1	16 25				.15 .25	NO YES		8	
A 48	1		J1-59 A22K2-3	1 25				.15 .25	NO YES		8	

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 9 OF 25

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		J243-22 A22K2-4	16 25				.15 .25	NO YES		 8	
A 50	1		J243-8 A22K2-8	16 25				.15 .25	NO YES		 8	
A 51	1		J243-18 A22K3-5	16 25				.15 .25	NO YES		 8	
A 52	1		J243-39 A22K3-4	16 25				.15 .25	NO YES		 8	
A 53	1		J243-20 A22K3-8	16 25				.15 .25	NO YES		 8	
A 54	1		J1-18 A22K3-7	1 25				.15 .25	NO YES		 8	
A 55	1		J1-36 A22K3-3	1 25				.15 .25	NO YES		 8	
A 56	1		J232-C E1	4 17				.25 .25	YES NO		9 14	
A 57	1		A18-13 A23K1-8	37 22				.25 .25	YES YES		 8	
A 58	1		A18-17 A23K3-8	37 21				.25 .25	YES YES		 8	
A 59	1		J1-76 S4-1	1 18				.15 .25	NO YES		 8	
A 60	1		A23K1-3 S4-1	22 18				.25 .25	YES YES		8 8	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		S4-2 A23K1-2	18 22				.25 .25	YES YES		8 8	
A 62	1		J243-17 A23-1	16 23				.15 .25	NO YES			
A 63	1		J243-34 A23-2	16 23				.15 .25	NO YES			
A 64	1		J1-53 S5-1	1 18				.15 .25	NO YES		 8	
A 65	1		A23K2-3 S5-1	21 18				.25 .25	YES YES		8 6	
A 66	1		A23K2-2 S5-2	21 18				.25 .25	YES YES		8 8	
A 67	1		J243-33 A23-3	16 19				.15 .25	NO YES			
A 68	1		J243-16 A23-4	16 19				.15 .25	NO YES			
A 69	1		J1-77 S6-1	1 29				.15 .25	NO YES		 8	
A 70	1		A23K3-3 S6-1	21 29				.25 .25	YES YES		8 8	
A 71	1		A23K3-2 S6-2	21 29				.25 .25	YES YES		8 8	
A 72	1		J243-15 A23-5	16 20				.15 .25	NO YES			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		J243-32 A23-6	16 20				.15 .25	NO YES			
A 74	2				3.30 3.30	3.00 3.00				A,68 8,7	13, 12 12	
A 74A	1		SHLD OFA74 J1-43	 1				.15 .15	NO NO			
A 74L			J1-72 J243-42	1 16				.15 .15	NO NO			
A 74R			J1-73 J243-24	1 16				.15 .15	NO NO			
A 75	2				3.80 3.30	3.50 3.00				A,68 8,7	13, 12 12	
A 75A	1		SHLD OFA75 J1-46	 1				.15 .15	NO NO			
A 75L			J1-70 J243-43	1 16				.15 .15	NO NO			
A 75R			J1-71 J243-44	1 16				.15 .15	NO NO			
A 76	1		J1-24 J244-1	1 5				.15 .15	NO NO			
A 77	1		J1-25 J244-79	1 5				.15 .15	NO NO			
A 78	1		J1-23 E3-8	1 35				.15 .27	NO NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1		J244-2 E3-8	5 35				.15 .27	NO NO			
A 80	1		J244-19 E3-8	5 35				.15 .27	NO NO			
A 81	1		A12-37 E3-8	43 35				.25 .27	YES NO			
A 82	1		A13-37 E3-8	42 35				.25 .27	YES NO			
A 83	1		A15-37 E3-8B	40 35				.25 .27	YES NO			
A 84	1		A16-37 E3-8B	39 35				.25 .27	YES NO			
A 85	1		A17-37 E3-8B	38 35				.25 .27	YES NO			
A 86	1		J244-78 A18-8	5 37				.15 .25	NO YES			
A 87	1		A18-4 J1-26	37 1				.25 .15	YES NO			
A 88	1		J1-83 A12-2	1 43				.15 .25	NO YES			
A 89	1		J1-84 A13-2	1 42				.15 .25	NO YES			
A 90	1		J1-21 A14-2	1 41				.15 .25	NO YES			

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1		J1-42 A15-2	1 40				.15 .25	NO YES			
A 92	1		J1-41 A16-2	1 39				.15 .25	NO YES			
A 93	1		J1-60 A17-2	1 38				.15 .25	NO YES			
A 94	1		J1-43 J244-18	1 5				.15 .15	NO NO			
A 95	1		J1-8 E4-88	1 6				.15 .29	NO NO			
A 96	1		A18-16 A17-23	37 38				.25 .25	YES YES			
A 97	1		A16-23 A17-23	39 38				.25 .25	YES YES			
A 98	1		A16-23 A15-23	39 40				.25 .25	YES YES			
A 99	1		A14-23 A15-23	41 40				.25 .25	YES YES			
A 100	1		A14-23 A13-23	41 42				.25 .25	YES YES			
A 101	1		A12-23 A13-23	43 42				.25 .25	YES YES			
A 102	1		A8-13 A9-38	13 14				.25 .25	YES YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 14 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1		A7-13 A8-38	12 13				.25 .25	YES YES			
A 104	1		A6-13 A7-38	11 12				.25 .25	YES YES			
A 105	1		A5-13 A6-38	10 11				.25 .25	YES YES			
A 106	1		A4-13 A5-38	9 10				.25 .25	YES YES			
A 107	1		A2-13 A3-38	7 8				.25 .25	YES YES			
A 108	1		J244-4 A12-4	5 43				.15 .25	NO YES			
A 109	1		J244-5 A12-42	5 43				.15 .25	NO YES			
A 110	1		J244-6 A12-17	5 43				.15 .25	NO YES			
A 111	1		J244-7 A12-21	5 43				.15 .25	NO YES			
A 112	1		J244-8 A13-4	5 42				.15 .25	NO YES			
A 113	1		J244-9 A13-42	5 42				.15 .25	NO YES			
A 114	1		J244-10 A13-17	5 42				.15 .25	NO YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 15 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 115	1		J244-11 A13-21	5 42				.15 .25	NO YES			
A 116	1		J244-12 A14-4	5 41				.15 .25	NO YES			
A 117	1		J244-13 A14-42	5 41				.15 .25	NO YES			
A 118	1		J244-14 A14-17	5 41				.15 .25	NO YES			
A 119	1		J244-15 A14-21	5 41				.15 .25	NO YES			
A 120	1		J244-24 A15-4	5 40				.15 .25	NO YES			
A 121	1		J244-25 A15-42	5 40				.15 .25	NO YES			
A 122	1		A4-38 A3-13	9 8				.25 .25	YES YES			
A 123	1		J244-26 A15-17	5 40				.15 .25	NO YES			
A 124	1		J244-27 A15-21	5 40				.15 .25	NO YES			
A 125	1		J244-28 A16-4	5 39				.15 .25	NO YES			
A 126	1		J244-29 A16-42	5 39				.15 .25	NO YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 16 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 127	1		J244-30 A16-17	5 39				.15 .25	NO YES			
A 128	1		J244-31 A16-21	5 39				.15 .25	NO YES			
A 129	1		J244-32 A17-4	5 38				.15 .25	NO YES			
A 130	1		J244-33 A17-42	5 38				.15 .25	NO YES			
A 131	1		J244-34 A17-17	5 38				.15 .25	NO YES			
A 132	1		J244-35 A17-21	5 38				.15 .25	NO YES			
A 133	1		J244-20 A9-40	5 14				.15 .25	NO YES			
A 134	1		J244-21 A9-32	5 14				.15 .25	NO YES			
A 135	1		J1-27 A18-5	1 37				.15 .25	NO YES			
A 136	1		J1-47 A18-1	1 37				.15 .25	NO YES			
A 137	1		A18-6 A9-19	37 14				.25 .25	YES YES			
A 138	1		A18-8 A9-31	37 14				.25 .25	YES YES			

SIZE A
CODE IDENT NO. 99974
6900089
SCALE-NONE
REV LTR G
SHEET 17 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 139	1		A18-2 A8-1	37 13				.25 .25	YES YES			
A 140	1		A18-4 A8-15	37 13				.25 .25	YES YES			
A 141	1		J1-81 A8-19	1 13				.15 .25	NO YES			
A 142	1		J1-56 A7-1	1 12				.15 .25	NO YES			
A 143	1		J1-80 A7-19	1 12				.15 .25	NO YES			
A 144	1		E4-88 A2-31	6 7				.29 .25	NO YES			
A 145	1		A8-31 A7-31	13 12				.25 .25	YES YES			
A 146	1		J1-55 A7-31	1 12				.15 .25	NO YES			
A 147	1		A8-17 J244-22	13 5				.25 .15	YES NO			
A 148	1		A8-9 J244-23	13 5				.25 .15	YES NO			
A 149	1		A8-40 J244-36	13 5				.25 .15	YES NO			
A 150	1		A8-32 J244-37	13 5				.25 .15	YES NO			

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G		SHEET 18 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 151	1		A7-17 J244-40	12 5				.25 .15	YES NO			
A 152	1		A7-9 J244-41	12 5				.25 .15	YES NO			
A 153	1		A7-40 J244-44	12 5				.25 .15	YES NO			
A 154	1		A7-32 J244-45	12 5				.25 .15	YES NO			
A 155	1		A18-14 E2-88	37 3				.25 .27	YES NO			
A 156	1		J1-52 E2-88	1 3				.15 .27	NO NO			
A 157	1		J244-39 E2-8	5 3				.15 .27	NO NO			
A 158	1		J244-43 E2-8	5 3				.15 .27	NO NO			
A 159	1		J244-47 E2-8	5 3				.15 .27	NO NO			
A 160	1		J1-31 J244-38	1 5				.15 .15	NO NO			
A 161	1		J1-30 J244-42	1 5				.15 .15	NO NO			
A 162	1		J1-51 J244-46	1 5				.15 .15	NO NO			

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G		SHEET 19 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 163	1		J1-74 J244-60	1 5				.15 .15	NO NO			
A 164	1		J1-75 J244-61	1 5				.15 .15	NO NO			
A 165	1		J1-2 A6-1	1 11				.15 .25	NO YES			
A 166	1		J1-7 A6-19	1 11				.15 .25	NO YES			
A 167	1		J1-19 A5-1	1 10				.15 .25	NO YES			
A 168	1		J1-20 A5-19	1 10				.15 .25	NO YES			
A 169	1		J1-39 A4-1	1 9				.15 .25	NO YES			
A 170	1		J1-38 A4-19	1 9				.15 .25	NO YES			
A 171	1		J1-37 A3-1	1 8				.15 .25	NO YES			
A 172	1		J1-61 A3-19	1 8				.15 .25	NO YES			
A 173	1		J1-62 A2-1	1 7				.15 .25	NO YES			
A 174	1		J1-63 A2-19	1 7				.15 .25	NO YES			

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G		SHEET 20 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 175	1		J244-48 A6-17	5 11				.15 .25	NO YES			
A 176	1		J244-49 A6-9	5 11				.15 .25	NO YES			
A 177	1		J244-50 A6-40	5 11				.15 .25	NO YES			
A 178	1		J244-51 A6-32	5 11				.15 .25	NO YES			
A 179	1		J244-52 A5-17	5 10				.15 .25	NO YES			
A 180	1		J244-53 A5-9	5 10				.15 .25	NO YES			
A 181	1		J244-54 A5-40	5 10				.15 .25	NO YES			
A 182	1		J244-55 A5-32	5 10				.15 .25	NO YES			
A 183	1		J244-56 A4-17	5 9				.15 .25	NO YES			
A 184	1		J244-57 A4-9	5 9				.15 .25	NO YES			
A 185	1		J244-58 A4-40	5 9				.15 .25	NO YES			
A 186	1		J244-59 A4-32	5 9				.15 .25	NO YES			

SIZE	CODE IDENT NO.		
A	99974	6900089	
SCALE-NONE	REV LTR G		SHEET 21 OF 25

WIRING HARNESS A 6900089 G ←

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 187	1		J244-62	5				.15	NO			
			A3-17	8				.25	YES			
A 188	1		J244-63	5				.15	NO			
			A3-9	8				.25	YES			
A 189	1		J244-64	5				.15	NO			
			A3-40	8				.25	YES			
A 190	1		J244-65	5				.15	NO			
			A3-32	8				.25	YES			
A 191	1		J244-66	5				.15	NO			
			A2-17	7				.25	YES			
A 192	1		J244-67	5				.15	NO			
			A2-9	7				.25	YES			
A 193	1		J244-68	5				.15	NO			
			A2-40	7				.25	YES			
A 194	1		J244-69	5				.15	NO			
			A2-32	7				.25	YES			
A 195	1		J1-85	1				.15	NO			
			E1	17				[illegible]	NO		14	
A 196	1		J1-82	1				.15	NO			
			A24-3	31				.25	YES			
A 197	1		J1-57	1				.15	NO			
			J244-71	5				.15	NO			
A 198	1		J1-58	1				.15	NO			
			A24-5	31				.25	YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR G | SHEET 22 OF 25

WIRING HARNESS A 6900089 G ←

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1		J1-34	1				.15	NO			
			J244-73	5				.15	NO			
A 200	1		J1-35	1				.15	NO			
			A24-7	31				.25	YES			
A 201	1		J1-17	1				.15	NO			
			J244-75	5				.15	NO			
A 202	1		A24-4	31				.25	YES			
			J244-70	5				.15	NO			
A 203	1		A24-6	31				.25	YES			
			J244-72	5				.15	NO			
A 204	1		A24-8	31				.25	YES			
			J244-74	5				.15	NO			
A 205	1		E4-8	6				.29	NO			
			A6-15	11				.25	YES			
A 206	1		E4-8	6				.29	NO			
			A6-31	11				.25	YES			
A 207	1		E4-8	6				.29	NO			
			A5-15	10				.25	YES			
A 208	1		E4-8	6				.29	NO			
			A5-31	10				.25	YES			
A 209	1		E4-8	6				.29	NO			
			A4-15	9				.25	YES			
A 210	1		E4-8	6				.29	NO			
			A4-31	9				.25	YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR G | SHEET 23 OF 25

WIRING HARNESS A 6900089 G F8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 211	1		E4-8	6				.29	NO			
			A3-15	8				.25	YES			
A 212	1		E4-8	6				.29	NO			
			A3-31	8				.25	YES			
A 213	1		E4-8B	6				.29	NO			
			A2-15	7				.25	YES			
A 214	1		A14-37	41				.25	YES			
			E4-8B	6				.29	NO			
A 215	1		A22K1-3	24				.25	YES		8	
			A12-23	43				.25	YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

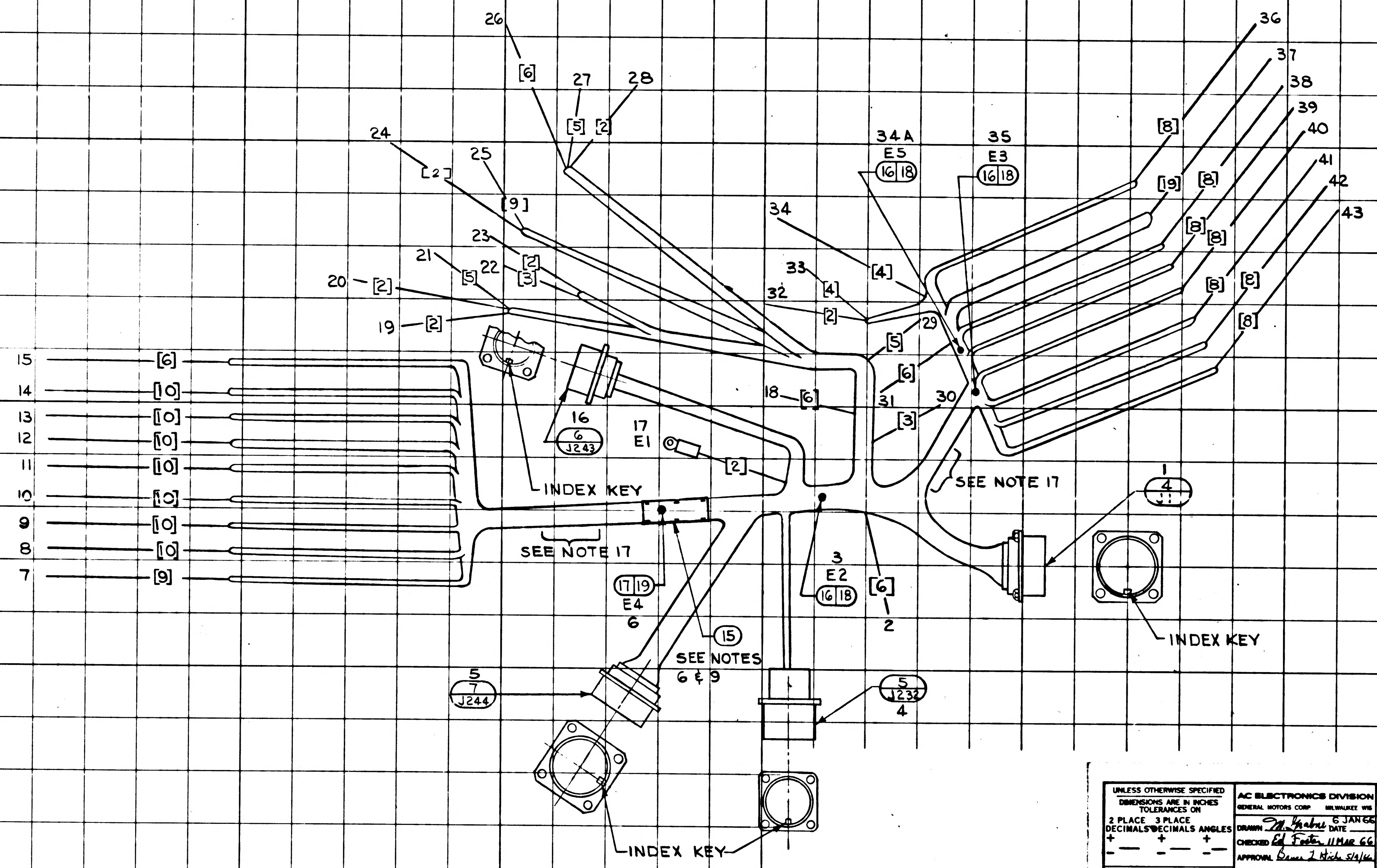
SCALE-NONE | REV LTR G | SHEET 24 OF 25

H 6800069

REVISIONS 28598

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.

SEE SHEET 1 FOR REVISION RECORD



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16
6
J243
17
E1
[2]
INDEX KEY
SEE NOTE 17
SEE NOTE 17
1
4
17 19
E4
6
15
SEE NOTES
6 & 9
3
E2
16 18
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2
INDEX KEY
5
7
J244
5
J232
4
INDEX KEY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN M. Grabner DATE 6 JAN 66 CHECKED Ed Foster 11 MAR 66 APPROVAL Bruce L Hicks 5/4/66 CONTRACT NAS9-497	WIRING HARNESS "A"
MATERIAL —	NASA APPROVAL 5/4/66	CODE IDENT NO 99974 | SIZE D | 6900089
APPROVAL	MIT APPROVAL 5-9-66	SCALE FULL | SHEET 25 OF 25

MX 109894

APPLICATION	
NEXT ASSY	USED ON
6900088-011	6900088-011

REVISIONS				
LTR	DESCRIPTION	DATE	APPROVED	
B	REPLACES REV A WITH CHANGE PER MXC 210438	6 APR 66	JJJ	
C	REVISED PER MXC 210874	18 APR 66	EP	
D	REVISED PER MXC 210947	22-APR 66	MG	
E	REVISED PER MXC 211543	27 APR 66	LSC	
F	REVISED PER MXC 211822	28 APR 66	GM	RWH
Ⓜ G	INITIAL RELEASE CLASS A PER TDRR 28548	2 MAY 66		EF
H	REVISED PER TDRR 29972	14 JULY 66	JAC	
J	REVISED PER TDRR 30219	27 JUL 66	GW	EF
Ⓜ K	REVISED PER TDRR 30351	16 AUG 66	G	JI

Charleston 15 MAR 66

REV		G	K
SHEET		24	25

REV STATUS OF SHEETS																								
	REV	K	G	K	J	K	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
D.Q. 61601

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN M. Gralner 6 JAN 66 (DAY MO YR)
CHECKER Ed Foster 11 MAR 66
ENGINEER
APPROVAL 5/4/66
CONTR NO. NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

SIZE A
CODE IDENT. NO 99974
6900089
SCALE NONE
SHEET 1 OF 25

WIRING HARNESS A 6900089 G ~~E~~

NOTE GENERAL NOTES

NUMBER DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

4 NUMBER IN BRACKETS ARE QUANTITIES OF LEADS

5 SOLDER PER ND1002071 USING ITEM 20 OR ITEMS 22 AND 21.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER

7 LENGTHS SPECIFIED ARE BEFORE ACCESSORIES ARE ATTACHED.

8 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - SHIELD LEAD ON FROM END
L - WHITE WITH BLUE TRACER.
R - WHITE WITH RED TRACER.

9 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 3.

10 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

11 SPACING OF LEAD IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

12 SPIRALLING OF LEAD IDENTIFICATION IS ALLOWED.

13 ASSEMBLE PER ND1002032.

14 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~E~~ G	SHEET 2 OF 25

WIRING HARNESS A 6900089 K

NOTE GENERAL NOTES

NUMBER DESCRIPTION

15 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

16 ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.

17 DO NOT SPOT TIE IN THIS AREA.

18 SPOT TIE AS REQUIRED USING ITEM 3.

19 SPOT TIE AREA INDICATED ON BREAKOUTS TO TERMINAL AREAS 7 THRU 15 AND 36 THRU 43 USING ITEM 23.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR K	SHEET 3 OF 25

WIRING HARNESS A 6900089 J

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900089-001	WIRE, ND1002181 TYPE I CLASS 1 24AWG WHITE 400 FEET TOTAL LENGTH
	2	1	6900089-002	WIRE, ND1002181 TYPE II CLASS 4, 24AWG WHT/BLU, WHT/RED 2 FEET TOTAL LENGTH
3	3	70	1897406-005	STRAP, CABLE, ADJUSTABLE
3	4	1	6900132	CONNECTOR, RECEPTACLE, ELECTRICAL (INSEPARABLE ASSEMBLY)
	5	1	MS3102R14S-7S(C)	(1896916-107) CONNECTOR, RECEPTACLE
3	6	1	1897252-109	CONNECTOR, RECEPTACLE
3	7	1	1897247-001	CONNECTOR, RECEPTACLE
3	8	44	1015864-079	INSULATION-SLEEVING, ELECTRICAL
3	9	3	1015864-167	INSULATION-SLEEVING, ELECTRICAL
3	10	6	1015864-082	INSULATION-SLEEVING, ELECTRICAL
3	11	4	1015864-105	INSULATION-SLEEVING, ELECTRICAL
3	12	4	1010490-228	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINK
3	13	2	1010763- 2	SOLDER SLEEVE
3	14	2	1015902- 45	TERMINAL LUG
3	15	1	1016128-011	BAND IDENTIFICATION
3	16	5	1016006-001	SPLICE-REDUCER
3	17	1	1016006-002	SPLICE-REDUCER

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR J	SHEET 4 OF 25

WIRING HARNESS A 6900089 K

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
3	18	3	1010490-198	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
3	19	1	1010490-258	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
	20	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
	21	AR	MIL-F 14256 TYPE A OR W	FLUX (ES2798)
	22	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)
	23	AR	MIL-T-713	LACING TAPE, CLASS 2, TYPE P WAXED, BLACK.

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR K	SHEET 5 OF 25

WIRING HARNESS A   6900089   G ~~6~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1		J243-31 A21-1	16 26				.15 .25	NO YES			
A 2	1		J243-30 A21-2	16 26				.15 .25	NO YES			
A 3	1		J243-29 A21-3	16 28				.15 .25	NO YES			
A 4	1		J243-14 A21-4	16 28				.15 .25	NO YES			
A 5	1		J243-13 A21-5	16 26				.15 .25	NO YES			
A 6	1		J243-28 A21-6	16 26				.15 .25	NO YES			
A 7	1		A21K1-3 S2-5	26 2				.25 .25	YES YES		8 10	
A 8	1		A21K1-3 J1-78	26 1				.25 .15	YES NO		8	
A 9	1		A21K2-3 S2-4	27 2				.25 .25	YES YES		8 10	
A 10	1		A21K2-3 J1-32	27 1				.25 .15	YES NO		8	
A 11	1		A21K3-3 S2-3	27 2				.25 .25	YES YES		8 10	
A 12	1		A21K3-3 J1-33	27 1				.25 .15	YES NO		8	

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~6~~ G	SHEET 6 OF 25

MIL 2084 9-65

WIRING HARNESS A   6900089   G ~~6~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		A24K1-3 S2-2	33 2				.25 .25	YES YES		8 10	
A 14	1		A24K1-3 A18-10	33 37				.25 .25	YES YES		8	
A 15	1		A21K3-8 A24K1-2	27 33				.25 .25	YES YES		8 8	
A 16	1		J243-5 A24-1	16 32				.15 .25	NO YES			
A 17	1		J243-6 A24-2	16 32				.15 .25	NO YES			
A 18	1		A24K1-8 S2-6	33 2				.25 .25	YES YES		8 10	
A 19	1		S2-C1 A9-1	2 14				.25 .25	YES YES		10	
A 20	1		J232-A A10-3	4 15				.25 .25	YES YES		9	
A 21	1		J232-B A10-1	4 15				.25 .25	YES YES		9	
A 22	1		A10-7 A9-17	15 14				.25 .25	YES YES			
A 23	1		A10-21 A9-9	15 14				.25 .25	YES YES			
A 24	1		A10-19 A9-13	15 14				.25 .25	YES YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~6~~ G	SHEET 7 OF 25

MIL 2084 9-65

WIRING HARNESS A   6900089   G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		A9-15 A18-12	14 37				.25 .25	YES YES			
A 26	1		A20-17 A18-12	36 37				.25 .25	YES YES			
A 27	1		A20-22 A18-10	36 37				.25 .25	YES YES			
A 28	1		S1-3 A10-19	30 15				.25 .25	YES YES		8	
A 29	1		A18-9 J1-65	37 1				.25 .15	YES NO			
A 30	1		A18-24 E5-88	37 34A				.25 .26	YES NO			
A 31	1		J1-79 E5-8	1 34A				.15 .26	NO NO			
A 32	1		J1-54 E5-8	1 34A				.15 .26	NO NO			
A 33	1		J1-16 E5-8	1 34A				.15 .26	NO NO			
A 34	1		J1-64 E5-8	1 34A				.15 .26	NO NO			
A 35	1		J1-45 A20-75	1 36				.15 .25	NO YES			
A 36	1		J1-69 A20-78	1 36				.15 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 8 OF 25

MIL 2084 9-65

WIRING HARNESS A   6900089   G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		J244-76 A20-3	5 36				.15 .25	NO YES			
A 38	1		J244-77 A20-14	5 36				.15 .25	NO YES			
A 39	1		J1-66 XF1-2	1 34				.15 .25	NO YES		 11	
A 40	1		J1-67 XF1-2	1 34				.15 .25	NO YES		 11	
A 41	1		J1-68 XF1-2	1 34				.15 .25	NO YES		 11	
A 42	1		S1-2 XF1-1	30 34				.25 .25	YES YES		8 11	
A 43	1		A20-81 A18-16	36 37				.25 .25	YES YES			
A 44	1		J1-6 S3-1	1 29				.15 .25	NO YES		 8	
A 45	1		A20-81 S1-3	36 30				.25 .25	YES YES		 8	
A 46	1		S3-2 A22K1-3	29 24				.25 .25	YES YES		8 8	
A 47	1		J243-35 A22K3-1	16 25				.15 .25	NO YES		 8	
A 48	1		J1-59 A22K2-3	1 25				.15 .25	NO YES		 8	

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 9 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		J243-22	16				.15	NO			
			A22K2-4	25				.25	YES		8	
A 50	1		J243-8	16				.15	NO			
			A22K2-8	25				.25	YES		8	
A 51	1		J243-18	16				.15	NO			
			A22K3-5	25				.25	YES		8	
A 52	1		J243-39	16				.15	NO			
			A22K3-4	25				.25	YES		8	
A 53	1		J243-20	16				.15	NO			
			A22K3-8	25				.25	YES		8	
A 54	1		J1-18	1				.15	NO			
			A22K3-7	25				.25	YES		8	
A 55	1		J1-36	1				.15	NO			
			A22K3-3	25				.25	YES		8	
A 56	1		J232-C	4				.25	YES		9	
			E1	17				.25	NO		14	
A 57	1		A18-13	37				.25	YES			
			A23K1-8	22				.25	YES		8	
A 58	1		A18-17	37				.25	YES			
			A23K3-8	21				.25	YES		8	
A 59	1		J1-76	1				.15	NO			
			S4-1	18				.25	YES		8	
A 60	1		A23K1-3	22				.25	YES		8	
			S4-1	18				.25	YES		8	

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 10 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		S4-2	18				.25	YES		8	
			A23K1-2	22				.25	YES		8	
A 62	1		J243-17	16				.15	NO			
			A23-1	23				.25	YES			
A 63	1		J243-34	16				.15	NO			
			A23-2	23				.25	YES			
A 64	1		J1-53	1				.15	NO			
			S5-1	18				.25	YES		8	
A 65	1		A23K2-3	21				.25	YES		8	
			S5-1	18				.25	YES		8	
A 66	1		A23K2-2	21				.25	YES		8	
			S5-2	18				.25	YES		8	
A 67	1		J243-33	16				.15	NO			
			A23-3	19				.25	YES			
A 68	1		J243-16	16				.15	NO			
			A23-4	19				.25	YES			
A 69	1		J1-77	1				.15	NO			
			S6-1	29				.25	YES		8	
A 70	1		A23K3-3	21				.25	YES		8	
			S6-1	29				.25	YES		8	
A 71	1		A23K3-2	21				.25	YES		8	
			S6-2	29				.25	YES		8	
A 72	1		J243-15	16				.15	NO			
			A23-5	20				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 11 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		J243-32	16				.15	NO			
			A23-6	20				.25	YES			
A 74	2				3.30	3.00				A,6B	13, 12	
					3.30	3.00				B,7	12	
A 74A	1		SHLD OFA74					.15	NO			
			J1-48	1				.15	NO			
A 74L			J1-72	1				.15	NO			
			J243-42	16				.15	NO			
A 74R			J1-73	1				.15	NO			
			J243-24	16				.15	NO			
A 75	2				3.80	3.50				A,6B	13, 12	
					3.30	3.00				B,7	12	
A 75A	1		SHLD OFA75					.15	NO			
			J1-46	1				.15	NO			
A 75L			J1-70	1				.15	NO			
			J243-43	16				.15	NO			
A 75R			J1-71	1				.15	NO			
			J243-44	16				.15	NO			
A 76	1		J1-24	1				.15	NO			
			J244-1	5				.15	NO			
A 77	1		J1-25	1				.15	NO			
			J244-79	5				.15	NO			
A 78	1		J1-23	1				.15	NO			
			E3-8	35				.27	NO			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 12 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1		J244-2	5				.15	NO			
			E3-8	35				.27	NO			
A 80	1		J244-19	5				.15	NO			
			E3-8	35				.27	NO			
A 81	1		A12-37	43				.25	YES			
			E3-8	35				.27	NO			
A 82	1		A13-37	42				.25	YES			
			E3-8	35				.27	NO			
A 83	1		A15-37	40				.25	YES			
			E3-8B	35				.27	NO			
A 84	1		A16-37	39				.25	YES			
			E3-8B	35				.27	NO			
A 85	1		A17-37	38				.25	YES			
			E3-8B	35				.27	NO			
A 86	1		J244-78	5				.15	NO			
			A18-8	37				.25	YES			
A 87	1		A18-4	37				.25	YES			
			J1-26	1				.15	NO			
A 88	1		J1-83	1				.15	NO			
			A12-2	43				.25	YES			
A 89	1		J1-84	1				.15	NO			
			A13-2	42				.25	YES			
A 90	1		J1-21	1				.15	NO			
			A14-2	41				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 13 OF 25

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1		J1-42	1				.15	NO			
			A15-2	40				.25	YES			
A 92	1		J1-41	1				.15	NO			
			A16-2	39				.25	YES			
A 93	1		J1-60	1				.15	NO			
			A17-2	38				.25	YES			
A 94	1		J1-43	1				.15	NO			
			J244-18	5				.15	NO			
A 95	1		J1-8	1				.15	NO			
			E4-88	6				.29	NO			
A 96	1		A18-16	37				.25	YES			
			A17-23	38				.25	YES			
A 97	1		A16-23	39				.25	YES			
			A17-23	38				.25	YES			
A 98	1		A16-23	39				.25	YES			
			A15-23	40				.25	YES			
A 99	1		A14-23	41				.25	YES			
			A15-23	40				.25	YES			
A 100	1		A14-23.	41				.25	YES			
			A13-23	42				.25	YES			
A 101	1		A12-23	43				.25	YES			
			A13-23	42				.25	YES			
A 102	1		A8-13	13				.25	YES			
			A9-38	14				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 14 OF 25

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1		A7-13	12				.25	YES			
			A8-38	13				.25	YES			
A 104	1		A6-13	11				.25	YES			
			A7-38	12				.25	YES			
A 105	1		A5-13	10				.25	YES			
			A6-38	11				.25	YES			
A 106	1		A4-13	9				.25	YES			
			A5-38	10				.25	YES			
A 107	1		A2-13	7				.25	YES			
			A3-38	8				.25	YES			
A 108	1		J244-4	5				.15	NO			
			A12-4	43				.25	YES			
A 109	1		J244-5	5				.15	NO			
			A12-42	43				.25	YES			
A 110	1		J244-6	5				.15	NO			
			A12-17	43				.25	YES			
A 111	1		J244-7	5				.15	NO			
			A12-21	43				.25	YES			
A 112	1		J244-8	5				.15	NO			
			A13-4	42				.25	YES			
A 113	1		J244-9	5				.15	NO			
			A13-42	42				.25	YES			
A 114	1		J244-10	5				.15	NO			
			A13-17	42				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 15 OF 25

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 115	1		J244-11	5				.15	NO			
			A13-21	42				.25	YES			
A 116	1		J244-12	5				.15	NO			
			A14-4	41				.25	YES			
A 117	1		J244-13	5				.15	NO			
			A14-42	41				.25	YES			
A 118	1		J244-14	5				.15	NO			
			A14-17	41				.25	YES			
A 119	1		J244-15	5				.15	NO			
			A14-21	41				.25	YES			
A 120	1		J244-24	5				.15	NO			
			A15-4	40				.25	YES			
A 121	1		J244-25	5				.15	NO			
			A15-42	40				.25	YES			
A 122	1		A4-38	9				.25	YES			
			A3-13	8				.25	YES			
A 123	1		J244-26	5				.15	NO			
			A15-17	40				.25	YES			
A 124	1		J244-27	5				.15	NO			
			A15-21	40				.25	YES			
A 125	1		J244-28	5				.15	NO			
			A16-4	39				.25	YES			
A 126	1		J244-29	5				.15	NO			
			A16-42	39				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 16 OF 25

WIRING HARNESS A 6900089 G ~~8~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 127	1		J244-30	5				.15	NO			
			A16-17	39				.25	YES			
A 128	1		J244-31	5				.15	NO			
			A16-21	39				.25	YES			
A 129	1		J244-32	5				.15	NO			
			A17-4	38				.25	YES			
A 130	1		J244-33	5				.15	NO			
			A17-42	38				.25	YES			
A 131	1		J244-34	5				.15	NO			
			A17-17	38				.25	YES			
A 132	1		J244-35	5				.15	NO			
			A17-21	38				.25	YES			
A 133	1		J244-20	5				.15	NO			
			A9-40	14				.25	YES			
A 134	1		J244-21	5				.15	NO			
			A9-32	14				.25	YES			
A 135	1		J1-27	1				.15	NO			
			A18-5	37				.25	YES			
A 136	1		J1-47	1				.15	NO			
			A18-1	37				.25	YES			
A 137	1		A18-6	37				.25	YES			
			A9-19	14				.25	YES			
A 138	1		A18-8	37				.25	YES			
			A9-31	14				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~8~~ G	SHEET 17 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 139	1		A18-2 A8-1	37 13				.25 .25	YES YES			
A 140	1		A18-4 A8-15	37 13				.25 .25	YES YES			
A 141	1		J1-81 A8-19	1 13				.15 .25	NO YES			
A 142	1		J1-56 A7-1	1 12				.15 .25	NO YES			
A 143	1		J1-80 A7-19	1 12				.15 .25	NO YES			
A 144	1		E4-BB A2-31	6 7				.29 .25	NO YES			
A 145	1		A8-31 A7-31	13 12				.25 .25	YES YES			
A 146	1		J1-55 A7-31	1 12				.15 .25	NO YES			
A 147	1		A8-17 J244-22	13 5				.25 .15	YES NO			
A 148	1		A8-9 J244-23	13 5				.25 .15	YES NO			
A 149	1		A8-40 J244-36	13 5				.25 .15	YES NO			
A 150	1		A8-32 J244-37	13 5				.25 .15	YES NO			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 18 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 151	1		A7-17 J244-40	12 5				.25 .15	YES NO			
A 152	1		A7-9 J244-41	12 5				.25 .15	YES NO			
A 153	1		A7-40 J244-44	12 5				.25 .15	YES NO			
A 154	1		A7-32 J244-45	12 5				.25 .15	YES NO			
A 155	1		A18-14 E2-BB	37 3				.25 .27	YES NO			
A 156	1		J1-52 E2-BB	1 3				.15 .27	NO NO			
A 157	1		J244-39 E2-B	5 3				.15 .27	NO NO			
A 158	1		J244-43 E2-B	5 3				.15 .27	NO NO			
A 159	1		J244-47 E2-B	5 3				.15 .27	NO NO			
A 160	1		J1-31 J244-38	1 5				.15 .15	NO NO			
A 161	1		J1-30 J244-42	1 5				.15 .15	NO NO			
A 162	1		J1-51 J244-46	1 5				.15 .15	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 19 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 163	1		J1-74 J244-60	1 5				.15 .15	NO NO			
A 164	1		J1-75 J244-61	1 5				.15 .15	NO NO			
A 165	1		J1-2 A6-1	1 11				.15 .25	NO YES			
A 166	1		J1-7 A6-19	1 11				.15 .25	NO YES			
A 167	1		J1-19 A5-1	1 10				.15 .25	NO YES			
A 168	1		J1-20 A5-19	1 10				.15 .25	NO YES			
A 169	1		J1-39 A4-1	1 9				.15 .25	NO YES			
A 170	1		J1-38 A4-19	1 9				.15 .25	NO YES			
A 171	1		J1-37 A3-1	1 8				.15 .25	NO YES			
A 172	1		J1-61 A3-19	1 8				.15 .25	NO YES			
A 173	1		J1-62 A2-1	1 7				.15 .25	NO YES			
A 174	1		J1-63 A2-19	1 7				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 20 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 175	1		J244-48 A6-17	5 11				.15 .25	NO YES			
A 176	1		J244-49 A6-9	5 11				.15 .25	NO YES			
A 177	1		J244-50 A6-40	5 11				.15 .25	NO YES			
A 178	1		J244-51 A6-32	5 11				.15 .25	NO YES			
A 179	1		J244-52 A5-17	5 10				.15 .25	NO YES			
A 180	1		J244-53 A5-9	5 10				.15 .25	NO YES			
A 181	1		J244-54 A5-40	5 10				.15 .25	NO YES			
A 182	1		J244-55 A5-32	5 10				.15 .25	NO YES			
A 183	1		J244-56 A4-17	5 9				.15 .25	NO YES			
A 184	1		J244-57 A4-9	5 9				.15 .25	NO YES			
A 185	1		J244-58 A4-40	5 9				.15 .25	NO YES			
A 186	1		J244-59 A4-32	5 9				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 21 OF 25

WIRING HARNESS A 6900089 G ←

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 187	1		J244-62 A3-17	5 8				.15 .25	NO YES			
A 188	1		J244-63 A3-9	5 8				.15 .25	NO YES			
A 189	1		J244-64 A3-40	5 8				.15 .25	NO YES			
A 190	1		J244-65 A3-32	5 8				.15 .25	NO YES			
A 191	1		J244-66 A2-17	5 7				.15 .25	NO YES			
A 192	1		J244-67 A2-9	5 7				.15 .25	NO YES			
A 193	1		J244-68 A2-40	5 7				.15 .25	NO YES			
A 194	1		J244-69 A2-32	5 7				.15 .25	NO YES			
A 195	1		J1-85 E1	1 17				.15 .29	NO NO		14	
A 196	1		J1-82 A24-3	1 31				.15 .25	NO YES			
A 197	1		J1-57 J244-71	1 5				.15 .15	NO NO			
A 198	1		J1-58 A24-5	1 31				.15 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 22 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G ←

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1		J1-34 J244-73	1 5				.15 .15	NO NO			
A 200	1		J1-35 A24-7	1 31				.15 .25	NO YES			
A 201	1		J1-17 J244-75	1 5				.15 .15	NO NO			
A 202	1		A24-4 J244-70	31 5				.25 .15	YES NO			
A 203	1		A24-6 J244-72	31 5				.25 .15	YES NO			
A 204	1		A24-8 J244-74	31 5				.25 .15	YES NO			
A 205	1		E4-8 A6-15	6 11				.29 .25	NO YES			
A 206	1		E4-8 A6-31	6 11				.29 .25	NO YES			
A 207	1		E4-8 A5-15	6 10				.29 .25	NO YES			
A 208	1		E4-8 A5-31	6 10				.29 .25	NO YES			
A 209	1		E4-8 A4-15	6 9				.29 .25	NO YES			
A 210	1		E4-8 A4-31	6 9				.29 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 23 OF 25

MIL 2084 9-65

WIRING HARNESS A 6900089 G F8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 211	1		E4-8 A3-15	6 8				.29 .25	NO YES			
A 212	1		E4-8 A3-31	6 8				.29 .25	NO YES			
A 213	1		E4-88 A2-15	6 7				.29 .25	NO YES			
A 214	1		A14-37 E4-86	41 6				.25 .29	YES NO			
A 215	1		A22K1-3 A12-23	24 43				.25 .25	YES YES		8	

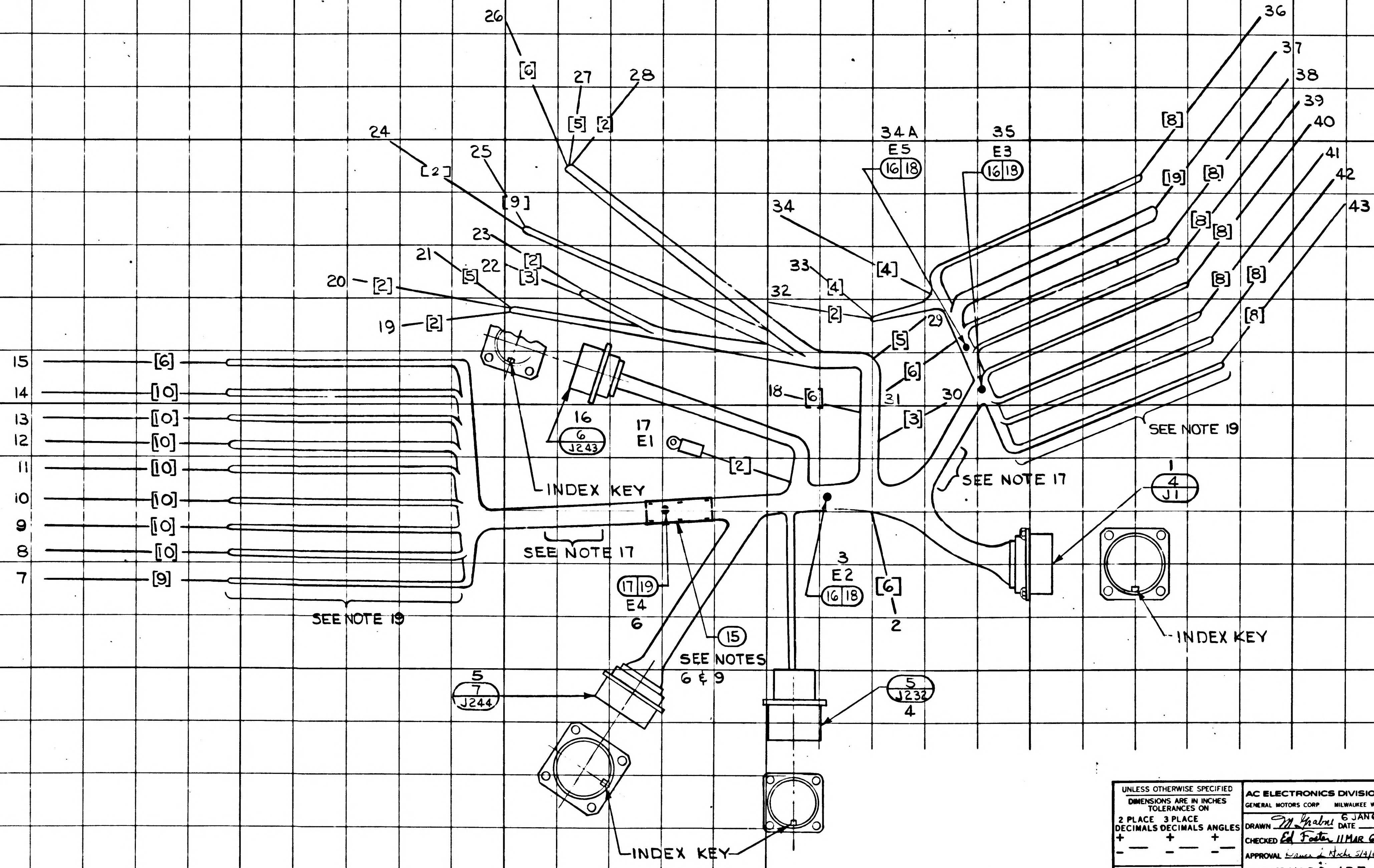
SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR FG	SHEET 24 OF 25

MIL 2084 9-65

K 6800069

REVISIONS 28598				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO		

SEE SHEET 1 FOR REVISION RECORD



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J243
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J232
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INDEX KEY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —	AC ELECTRONICS DIVISION GENERAL MOTORS CORP MILWAUKEE WIS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	DRAWN M. Grabne DATE 6 JAN 66 CHECKED Ed Foster 11 MAR 66 APPROVAL [illegible] 5/4/66 CONTRACT NAS9-497	WIRING HARNESS "A"
DO NOT SCALE THIS DRAWING		
MATERIAL —	NASA APPROVAL	CODE IDENT NO 99974 | SIZE D | 6900089
APPROVAL	MIT APPROVAL	SCALE FULL | SHEET 25 OF 25

MX 109894

APPLICATION	
NEXT ASSY	USED ON
6900088-011	6900088-011

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV A WITH CHANGE. PER MXC 210438	6 APR 66	J
C	REVISED PER MXC 210874	18 APR 66	RLP
D	REVISED PER MXC 210947	22-APR 66	MLC
E	REVISED PER MXC 211543	27 APR 66	LGC
F	REVISED PER MXC 211822	28 APR 66	GN RWH
Ⓜ G	INITIAL RELEASE CLASS A PER TDRR 28598	2 MAY 66	EF
H	REVISED PER TDRR 29972	14 JULY 66	JAC
J	REVISED PER TDRR 30219	27 JUL 66	GWM EF
K	REVISED PER TDRR 30351	16 AUG 66	GU JI
L	REVISED PER TDRR 30486	24 AUG 66	JHK

Cl. on Cectow 15 MAR 66

REV		G	K
SHEET		24	25

REV STATUS OF SHEETS																							
REV	L	G	K	J	K	G	G	G	G	G	G	G	L	L	G	G	G	G	G	G	G	G	G
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
D.O. 61601

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN W. Grabner 6 JAN 66
DAY MO YR
CHECKER Ed Foster 11 MAR 66
ENGINEER
APPROVAL Bruce L Hacka 5/4/66
CONTR NO. NAS9-497

NASA APPROVAL

MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

SIZE A
CODE IDENT. NO 99974

6900089

SCALE NONE
SHEET 1 OF 25

MIL 1377A6 12-65

NOTE NUMBER — GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

4 NUMBER IN BRACKETS ARE QUANTITIES OF LEADS

5 SOLDER PER ND1002071 USING ITEM 20 OR ITEMS 22 AND 21.

6 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER

7 LENGTHS SPECIFIED ARE BEFORE ACCESSORIES ARE ATTACHED.

8 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER -
A - SHIELD LEAD ON FROM END
L - WHITE WITH BLUE TRACER.
R - WHITE WITH RED TRACER.

9 FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 3.

10 APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

11 SPACING OF LEAD IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

12 SPIRALLING OF LEAD IDENTIFICATION IS ALLOWED.

13 ASSEMBLE PER ND1002032.

14 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 2 OF 25

NOTE NUMBER — GENERAL NOTES DESCRIPTION

15 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

16 ASSEMBLE CONTACTS IN SPARE CONNECTOR INSERT HOLES.

17 DO NOT SPOT TIE IN THIS AREA.

18 SPOT TIE AS REQUIRED USING ITEM 3.

19 SPOT TIE AREA INDICATED ON BREAKOUTS TO TERMINAL AREAS 7 THRU 15 AND 36 THRU 43 USING ITEM 23.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR K	SHEET 3 OF 25

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900089-001	WIRE, ND1002181 TYPE I CLASS 1 24AWG WHITE 400 FEET TOTAL LENGTH
	2	1	6900089-002	WIRE, ND1002181 TYPE II CLASS 4, 24AWG WHT/BLU, WHT/RED 2 FEET TOTAL LENGTH
3	3	70	1897406-005	STRAP, CABLE, ADJUSTABLE
3	4	1	6900132	CONNECTOR, RECEPTACLE, ELECTRICAL (INSEPARABLE ASSEMBLY)
	5	1	MS3102R14S-7S(C)	(1896916-107) CONNECTOR, RECEPTACLE
3	6	1	1897252-109	CONNECTOR, RECEPTACLE
3	7	1	1897247-001	CONNECTOR, RECEPTACLE
3	8	44	1015864-079	INSULATION-SLEEVING, ELECTRICAL
3	9	3	1015864-167	INSULATION-SLEEVING, ELECTRICAL
3	10	6	1015864-082	INSULATION-SLEEVING, ELECTRICAL
3	11	4	1015864-105	INSULATION-SLEEVING, ELECTRICAL
3	12	4	1010490-228	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINK
3	13	2	1010763- 2	SOLDER SLEEVE
3	14	2	1015902- 45	TERMINAL LUG
3	15	1	1016128-011	BAND IDENTIFICATION
3	16	3	1016006-001	SPLICE-REDUCER
3	17	1	1016006-002	SPLICE-REDUCER

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR J	SHEET 4 OF 25

LIST OF MATERIALS

NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
3	18	3	1010490-198	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
3	19	1	1010490-258	INSULATION SLEEVING, ELECTRICAL HEAT SHRINK
	20	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
	21	AR	MIL-F 14256 TYPE A OR W	FLUX (ES2798)
	22	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)
	23	AR	MIL-T-713	LACING TAPE, CLASS 2, TYPE P WAXED, BLACK.

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR K	SHEET 5 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1	J243-31 A21-1	16 26				.15 .25	NO YES			
A	2	1	J243-30 A21-2	16 26				.15 .25	NO YES			
A	3	1	J243-29 A21-3	16 28				.15 .25	NO YES			
A	4	1	J243-14 A21-4	16 28				.15 .25	NO YES			
A	5	1	J243-13 A21-5	16 26				.15 .25	NO YES			
A	6	1	J243-28 A21-6	16 26				.15 .25	NO YES			
A	7	1	A21K1-3 S2-5	26 2				.25 .25	YES YES		8 10	
A	8	1	A21K1-3 J1-79	26 1				.25 .15	YES NO		8	
A	9	1	A21K2-3 S2-4	27 2				.25 .25	YES YES		8 10	
A	10	1	A21K2-3 J1-32	27 1				.25 .15	YES NO		8	
A	11	1	A21K3-3 S2-3	27 2				.25 .25	YES YES		8 10	
A	12	1	A21K3-3 J1-33	27 1				.25 .15	YES NO		8	

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR G | SHEET 6 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	13	1	A24K1-3 S2-2	33 2				.25 .25	YES YES		8 10	
A	14	1	A24K1-3 A18-10	33 37				.25 .25	YES YES		8	
A	15	1	A21K3-8 A24K1-2	27 33				.25 .25	YES YES		8 8	
A	16	1	J243-5 A24-1	16 32				.15 .25	NO YES			
A	17	1	J243-6 A24-2	16 32				.15 .25	NO YES			
A	18	1	A24K1-8 S2-6	33 2				.25 .25	YES YES		8 10	
A	19	1	S2-C1 A9-1	2 14				.25 .25	YES YES		10	
A	20	1	J232-A A10-3	4 15				.25 .25	YES YES		9	
A	21	1	J232-B A10-1	4 15				.25 .25	YES YES		9	
A	22	1	A10-7 A9-17	15 14				.25 .25	YES YES			
A	23	1	A10-21 A9-9	15 14				.25 .25	YES YES			
A	24	1	A10-19 A9-13	15 14				.25 .25	YES YES			

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR G | SHEET 7 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	25	1	A9-15 A18-12	14 37				.25 .25	YES YES			
A	26	1	A20-17 A18-12	36 37				.25 .25	YES YES			
A	27	1	A20-22 A18-10	36 37				.25 .25	YES YES			
A	28	1	S1-3 A10-19	30 15				.25 .25	YES YES		8	
A	29	1	A18-9 J1-65	37 1				.25 .15	YES NO			
A	30	1	A18-24 E5-BB	37 34A				.25 .26	YES NO			
A	31	1	J1-79 F5-B	1 34A				.15 .26	NO NO			
A	32	1	J1-54 E5-B	1 34A				.15 .26	NO NO			
A	33	1	J1-16 E5-B	1 34A				.15 .26	NO NO			
A	34	1	J1-64 E5-B	1 34A				.15 .25	NO NO			
A	35	1	J1-45 A20-75	1 36				.15 .25	NO YES			
A	36	1	J1-69 A20-78	1 36				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR G | SHEET 8 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	37	1	J244-76 A20-3	5 36				.15 .25	NO YES			
A	38	1	J244-77 A20-14	5 36				.15 .25	NO YES			
A	39	1	J1-66 XF1-2	1 34				.15 .25	NO YES		 11	
A	40	1	J1-67 XF1-2	1 34				.15 .25	NO YES		 11	
A	41	1	J1-68 XF1-2	1 34				.15 .25	NO YES		 11	
A	42	1	S1-2 XF1-1	30 34				.25 .25	YES YES		8 11	
A	43	1	A20-81 A18-16	36 37				.25 .25	YES YES			
A	44	1	J1-6 S3-1	1 29				.15 .25	NO YES		 8	
A	45	1	A20-81 S1-3	36 30				.25 .25	YES YES		 8	
A	46	1	S3-2 A22K1-3	29 24				.25 .25	YES YES		8 8	
A	47	1	J243-35 A22K3-1	16 25				.15 .25	NO YES		 8	
A	48	1	J1-59 A22K2-3	1 25				.15 .25	NO YES		 8	

SIZE A | CODE IDENT NO. 99974 | 6900089
SCALE-NONE | REV LTR G | SHEET 9 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		J243-22 A22K2-4	16 25				.15 .25	NO YES		 8	
A 50	1		J243-8 A22K2-8	16 25				.15 .25	NO YES		 8	
A 51	1		J243-18 A22K3-5	16 25				.15 .25	NO YES		 8	
A 52	1		J243-39 A22K3-4	16 25				.15 .25	NO YES		 8	
A 53	1		J243-20 A22K3-8	16 25				.15 .25	NO YES		 8	
A 54	1		J1-18 A22K3-7	1 25				.15 .25	NO YES		 8	
A 55	1		J1-36 A22K3-3	1 25				.15 .25	NO YES		 8	
A 56	1		J232-C E1	4 17				.25 .25	YES NO		9 14	
A 57	1		A18-13 A23K1-8	37 22				.25 .25	YES YES		 8	
A 58	1		A18-17 A23K3-8	37 21				.25 .25	YES YES		 8	
A 59	1		J1-76 S4-1	1 18				.15 .25	NO YES		 8	
A 60	1		A23K1-3 S4-1	22 18				.25 .25	YES YES		8 8	

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR G | SHEET 10 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		S4-2 A23K1-2	18 22				.25 .25	YES YES		8 8	
A 62	1		J243-17 A23-1	16 23				.15 .25	NO YES			
A 63	1		J243-34 A23-2	16 23				.15 .25	NO YES			
A 64	1		J1-53 S5-1	1 18				.15 .25	NO YES		 8	
A 65	1		A23K2-3 S5-1	21 18				.25 .25	YES YES		8 8	
A 66	1		A23K2-2 S5-2	21 18				.25 .25	YES YES		8 8	
A 67	1		J243-33 A23-3	16 19				.15 .25	NO YES			
A 68	1		J243-16 A23-4	16 19				.15 .25	NO YES			
A 69	1		J1-77 S6-1	1 29				.15 .25	NO YES		 8	
A 70	1		A23K3-3 S6-1	21 29				.25 .25	YES YES		8 8	
A 71	1		A23K3-2 S6-2	21 29				.25 .25	YES YES		8 8	
A 72	1		J243-15 A23-5	16 20				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR G | SHEET 11 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		J243-32 A23-6	16 20				.15 .25	NO YES			
A 74	2				3.30 3.30	3.00 3.00				A,6B B,7	13, 12 12	
A 74A	1		SHLD OFA74 J1-48	 1				.15 .15	NO NO			
A 74L			J1-72 J243-42	1 16				.15 .15	NO NO			
A 74R			J1-73 J243-24	1 16				.15 .15	NO NO			
A 75	2				3.80 3.30	3.50 3.00				A,6B B,7	13, 12 12	
A 75A	1		SHLD OFA75 J1-46	 1				.15 .15	NO NO			
A 75L			J1-70 J243-43	1 16				.15 .15	NO NO			
A 75R			J1-71 J243-44	1 16				.15 .15	NO NO			
A 76	1		J1-24 J244-1	1 5				.15 .15	NO NO			
A 77	1		J1-25 J244-79	1 5				.15 .15	NO NO			
A 78	1		J1-23 E3-8	1 35				.15 .27	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR G | SHEET 12 OF 25

WIRING HARNESS A 6900089 L

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 79	1		J244-2 E3-8	5 35				.15 .27	NO NO			
A 80	1		J244-19 E3-8	5 35				.15 .27	NO NO			
A 81	1		A12-37 E3-8	43 35				.25 .27	YES NO			
A 82	1		A13-37 E3-8	42 35				.25 .27	YES NO			
A 83	1		A15-37 E3-88	40 35				.25 .27	YES NO			
A 84	1		A16-37 E3-88	39 35				.25 .27	YES NO			
A 85	1		A17-37 E3-88	38 35				.25 .27	YES NO			
A 86	1		J244-78 A18-8	5 37				.15 .25	NO YES			
A 87	1		A18-4 J1-26	37 1				.25 .15	YES NO			
A 88	1		J1-83 A12-3	1 43				.15 .25	NO YES			
A 89	1		J1-84 A13-3	1 42				.15 .25	NO YES			
A 90	1		J1-21 A14-3	1 41				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR L | SHEET 13 OF 25

WIRING HARNESS A 6900089 L

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 91	1		J1-42 A15-3	1 40				.15 .25	NO YES			
A 92	1		J1-41 A16-3	1 39				.15 .25	NO YES			
A 93	1		J1-60 A17-3	1 38				.15 .25	NO YES			
A 94	1		J1-43 J244-18	1 5				.15 .15	NO NO			
A 95	1		J1-8 E4-88	1 6				.15 .29	NO NO			
A 96	1		A18-16 A17-23	37 38				.25 .25	YES YES			
A 97	1		A16-23 A17-23	39 38				.25 .25	YES YES			
A 98	1		A16-23 A15-23	39 40				.25 .25	YES YES			
A 99	1		A14-23 A15-23	41 40				.25 .25	YES YES			
A 100	1		A14-23 A13-23	41 42				.25 .25	YES YES			
A 101	1		A12-23 A13-23	43 42				.25 .25	YES YES			
A 102	1		A8-13 A9-38	13 14				.25 .25	YES YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR L	SHEET 14 OF 25

WIRING HARNESS A 6900089 G ~~F~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 103	1		A7-13 A8-38	12 13				.25 .25	YES YES			
A 104	1		A6-13 A7-38	11 12				.25 .25	YES YES			
A 105	1		A5-13 A6-38	10 11				.25 .25	YES YES			
A 106	1		A4-13 A5-38	9 10				.25 .25	YES YES			
A 107	1		A2-13 A3-38	7 8				.25 .25	YES YES			
A 108	1		J244-4 A12-4	5 43				.15 .25	NO YES			
A 109	1		J244-5 A12-42	5 43				.15 .25	NO YES			
A 110	1		J244-6 A12-17	5 43				.15 .25	NO YES			
A 111	1		J244-7 A12-21	5 43				.15 .25	NO YES			
A 112	1		J244-8 A13-4	5 42				.15 .25	NO YES			
A 113	1		J244-9 A13-42	5 42				.15 .25	NO YES			
A 114	1		J244-10 A13-17	5 42				.15 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~F~~ G	SHEET 15 OF 25

WIRING HARNESS A 6900089 G ~~F~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 115	1		J244-11 A13-21	5 42				.15 .25	NO YES			
A 116	1		J244-12 A14-4	5 41				.15 .25	NO YES			
A 117	1		J244-13 A14-42	5 41				.15 .25	NO YES			
A 118	1		J244-14 A14-17	5 41				.15 .25	NO YES			
A 119	1		J244-15 A14-21	5 41				.15 .25	NO YES			
A 120	1		J244-24 A15-4	5 40				.15 .25	NO YES			
A 121	1		J244-25 A15-42	5 40				.15 .25	NO YES			
A 122	1		A4-38 A3-13	9 8				.25 .25	YES YES			
A 123	1		J244-26 A15-17	5 40				.15 .25	NO YES			
A 124	1		J244-27 A15-21	5 40				.15 .25	NO YES			
A 125	1		J244-28 A16-4	5 39				.15 .25	NO YES			
A 126	1		J244-29 A16-42	5 39				.15 .25	NO YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~F~~ G	SHEET 16 OF 25

WIRING HARNESS A 6900089 G ~~F~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 127	1		J244-30 A16-17	5 39				.15 .25	NO YES			
A 128	1		J244-31 A16-21	5 39				.15 .25	NO YES			
A 129	1		J244-32 A17-4	5 38				.15 .25	NO YES			
A 130	1		J244-33 A17-42	5 38				.15 .25	NO YES			
A 131	1		J244-34 A17-17	5 38				.15 .25	NO YES			
A 132	1		J244-35 A17-21	5 38				.15 .25	NO YES			
A 133	1		J244-20 A9-40	5 14				.15 .25	NO YES			
A 134	1		J244-21 A9-32	5 14				.15 .25	NO YES			
A 135	1		J1-27 A18-5	1 37				.15 .25	NO YES			
A 136	1		J1-47 A18-1	1 37				.15 .25	NO YES			
A 137	1		A18-6 A9-19	37 14				.25 .25	YES YES			
A 138	1		A18-8 A9-31	37 14				.25 .25	YES YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR ~~F~~ G	SHEET 17 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 139	1		A18-2 A8-1	37 13				.25 .25	YES YES			
A 140	1		A18-4 A8-15	37 13				.25 .25	YES YES			
A 141	1		J1-81 A8-19	1 13				.15 .25	NO YES			
A 142	1		J1-56 A7-1	1 12				.15 .25	NO YES			
A 143	1		J1-80 A7-19	1 12				.15 .25	NO YES			
A 144	1		E4-BB A2-31	6 7				.29 .25	NO YES			
A 145	1		A8-31 A7-31	13 12				.25 .25	YES YES			
A 146	1		J1-55 A7-31	1 12				.15 .25	NO YES			
A 147	1		A8-17 J244-22	13 5				.25 .15	YES NO			
A 148	1		A8-9 J244-23	13 5				.25 .15	YES NO			
A 149	1		A8-40 J244-36	13 5				.25 .15	YES NO			
A 150	1		A8-32 J244-37	13 5				.25 .15	YES NO			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 18 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 151	1		A7-17 J244-40	12 5				.25 .15	YES NO			
A 152	1		A7-9 J244-41	12 5				.25 .15	YES NO			
A 153	1		A7-40 J244-44	12 5				.25 .15	YES NO			
A 154	1		A7-32 J244-45	12 5				.25 .15	YES NO			
A 155	1		A18-14 E2-BB	37 3				.25 .27	YES NO			
A 156	1		J1-52 E2-BB	1 3				.15 .27	NO NO			
A 157	1		J244-39 E2-B	5 3				.15 .27	NO NO			
A 158	1		J244-43 E2-B	5 3				.15 .27	NO NO			
A 159	1		J244-47 E2-B	5 3				.15 .27	NO NO			
A 160	1		J1-31 J244-38	1 5				.15 .15	NO NO			
A 161	1		J1-30 J244-42	1 5				.15 .15	NO NO			
A 162	1		J1-51 J244-46	1 5				.15 .15	NO NO			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 19 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 163	1		J1-74 J244-60	1 5				.15 .15	NO NO			
A 164	1		J1-75 J244-61	1 5				.15 .15	NO NO			
A 165	1		J1-2 A6-1	1 11				.15 .25	NO YES			
A 166	1		J1-7 A6-19	1 11				.15 .25	NO YES			
A 167	1		J1-19 A5-1	1 10				.15 .25	NO YES			
A 168	1		J1-20 A5-19	1 10				.15 .25	NO YES			
A 169	1		J1-39 A4-1	1 9				.15 .25	NO YES			
A 170	1		J1-38 A4-19	1 9				.15 .25	NO YES			
A 171	1		J1-37 A3-1	1 8				.15 .25	NO YES			
A 172	1		J1-61 A3-19	1 8				.15 .25	NO YES			
A 173	1		J1-62 A2-1	1 7				.15 .25	NO YES			
A 174	1		J1-63 A2-19	1 7				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 20 OF 25

WIRING HARNESS A 6900089 G ~~B~~

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 175	1		J244-48 A6-17	5 11				.15 .25	NO YES			
A 176	1		J244-49 A6-9	5 11				.15 .25	NO YES			
A 177	1		J244-50 A6-40	5 11				.15 .25	NO YES			
A 178	1		J244-51 A6-32	5 11				.15 .25	NO YES			
A 179	1		J244-52 A5-17	5 10				.15 .25	NO YES			
A 180	1		J244-53 A5-9	5 10				.15 .25	NO YES			
A 181	1		J244-54 A5-40	5 10				.15 .25	NO YES			
A 182	1		J244-55 A5-32	5 10				.15 .25	NO YES			
A 183	1		J244-56 A4-17	5 9				.15 .25	NO YES			
A 184	1		J244-57 A4-9	5 9				.15 .25	NO YES			
A 185	1		J244-58 A4-40	5 9				.15 .25	NO YES			
A 186	1		J244-59 A4-32	5 9				.15 .25	NO YES			

SIZE A | CODE IDENT NO. 99974 | 6900089

SCALE-NONE | REV LTR ~~B~~ G | SHEET 21 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 187	1		J244-62	5				.15	NO			
			A3-17	8				.25	YES			
A 188	1		J244-63	5				.15	NO			
			A3-9	8				.25	YES			
A 189	1		J244-64	5				.15	NO			
			A3-40	8				.25	YES			
A 190	1		J244-65	5				.15	NO			
			A3-32	8				.25	YES			
A 191	1		J244-66	5				.15	NO			
			A2-17	7				.25	YES			
A 192	1		J244-67	5				.15	NO			
			A2-9	7				.25	YES			
A 193	1		J244-68	5				.15	NO			
			A2-40	7				.25	YES			
A 194	1		J244-69	5				.15	NO			
			A2-32	7				.25	YES			
A 195	1		J1-85	1				.15	NO			
			E1	17				.25	NO		14	
A 196	1		J1-82	1				.15	NO			
			A24-3	31				.25	YES			
A 197	1		J1-57	1				.15	NO			
			J244-71	5				.15	NO			
A 198	1		J1-58	1				.15	NO			
			A24-5	31				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 22 OF 25

WIRING HARNESS A 6900089 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 199	1		J1-34	1				.15	NO			
			J244-73	5				.15	NO			
A 200	1		J1-35	1				.15	NO			
			A24-7	31				.25	YES			
A 201	1		J1-17	1				.15	NO			
			J244-75	5				.15	NO			
A 202	1		A24-4	31				.25	YES			
			J244-70	5				.15	NO			
A 203	1		A24-6	31				.25	YES			
			J244-72	5				.15	NO			
A 204	1		A24-8	31				.25	YES			
			J244-74	5				.15	NO			
A 205	1		E4-8	6				.29	NO			
			A6-15	11				.25	YES			
A 206	1		E4-8	6				.29	NO			
			A6-31	11				.25	YES			
A 207	1		E4-8	6				.29	NO			
			A5-15	10				.25	YES			
A 208	1		E4-8	6				.29	NO			
			A5-31	10				.25	YES			
A 209	1		E4-8	6				.29	NO			
			A4-15	9				.25	YES			
A 210	1		E4-8	6				.29	NO			
			A4-31	9				.25	YES			

SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 23 OF 25

WIRING HARNESS A 6900089 G F8

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 211	1		E4-8	6				.29	NO			
			A3-15	8				.25	YES			
A 212	1		E4-8	6				.29	NO			
			A3-31	8				.25	YES			
A 213	1		E4-8B	6				.29	NO			
			A2-15	7				.25	YES			
A 214	1		A14-37	41				.25	YES			
			E4-8B	6				.29	NO			
A 215	1		A22K1-8	24				.25	YES		3	
			A12-23	43				.25	YES			

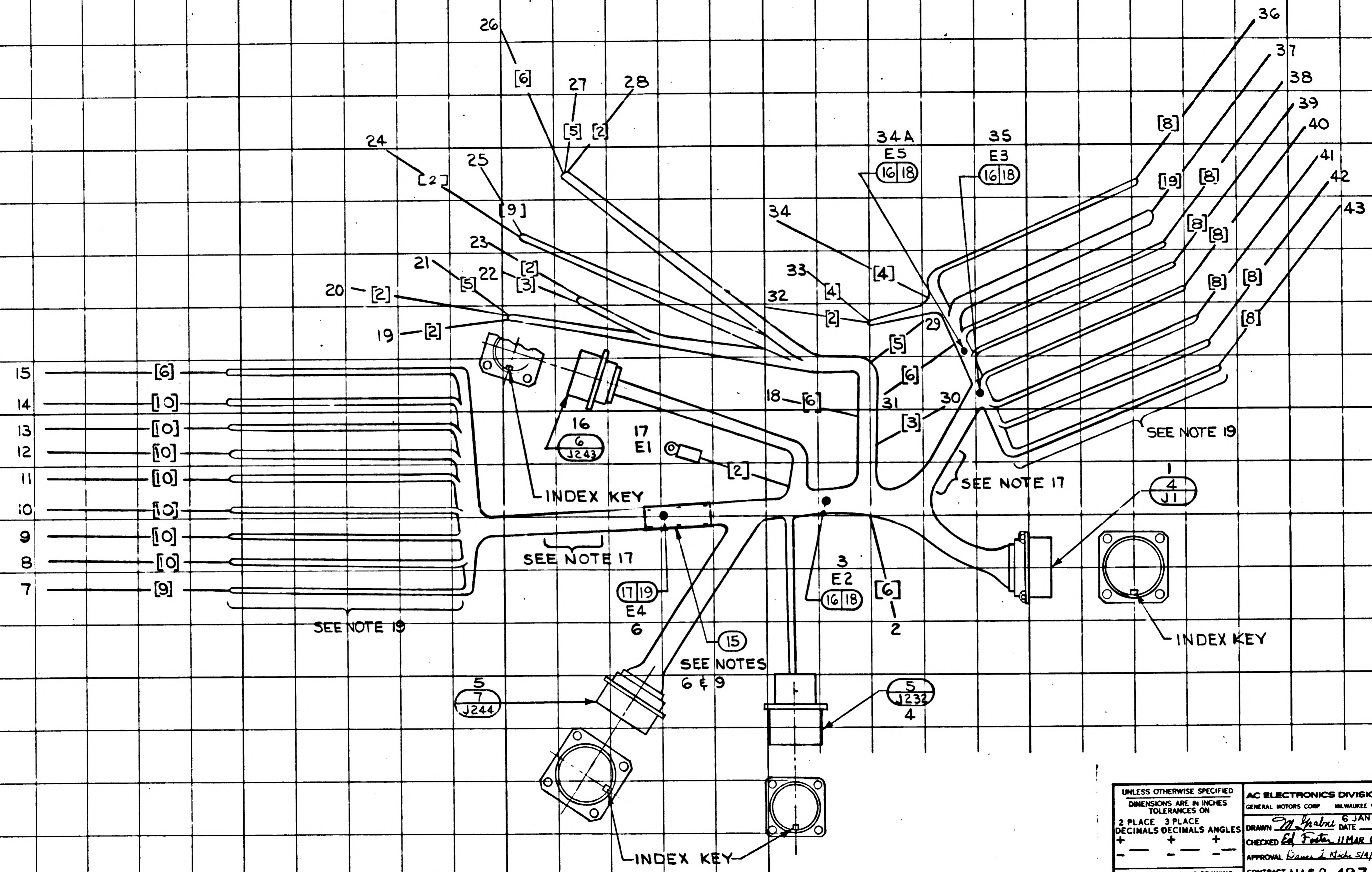
SIZE	CODE IDENT NO.	
A	99974	6900089
SCALE-NONE	REV LTR G	SHEET 24 OF 25

6800069

REVISIONS 28593

SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO		

SEE SHEET 1 FOR REVISION RECORD



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SEE NOTE 19
SEE NOTE 17
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J243
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J1
INDEX KEY
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7
J244
5
J232
4
INDEX KEY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
	DRAWN M. Gralne DATE 6 JAN 66 CHECKED Ed Foster 11 MAR 66 APPROVAL Bruce L. Hicks 5/4/66 CONTRACT NAS9-497	WIRING HARNESS "A"		
DO NOT SCALE THIS DRAWING				
MATERIAL —	NASA APPROVAL	CODE IDENT NO 99974	SIZE D	6900089
APPROVAL	MIT APPROVAL	SCALE FULL		SHEET 25 OF 25

MX 109894

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	① REPLACES WITH CHANGE REV (-) PER MXC209708	8 MAR 66	A.N.
B	REVISED PER MXC 209933	18 MAR 66	J.H.P.
C	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	JHP EF

Charleston
24 FEB 66

REV								
SHEET								
REV STATUS OF SHEETS	REV	C	C	C	C	C	C
	SHEET	1	2	3	4	5	6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
MX116374

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN C. McKulla 17 FEB 66 (DAY MO YR)
CHECKER 22 FEB 66
ENGINEER
APPROVAL Johnson
CONTR NO. NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W562

SIZE	CODE IDENT. NO	
A	99974	6900092
SCALE NONE		SHEET 1 OF 6

MIL 1377A6 12-65

CABLE ASSEMBLY W562 6900092 C

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOTE ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
4	ASSEMBLE PER ND 1002032
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 10.
7	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
8	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 9 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
9	SERIALIZE PER ND 1002032
10	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED, .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
11	TAPE HARNESS USING ITEM 11.

SIZE A	CODE IDENT NO. 99974	6900092
SCALE-NONE	REV LTR C	SHEET 2 OF 6

MIL 2084 9-65

CABLE ASSEMBLY W562 6900092 C

NOTE NUMBER

GENERAL NOTES DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE A	CODE IDENT NO. 99974	6900092
SCALE-NONE	REV LTR C	SHEET 3 OF 6

MIL 2084 9-65

CABLE ASSEMBLY W562 6900092 C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900092-001	WIRE ND1002181 TYPE 1 CLASS 1, 22 AWG WHT, 48 FT TOTAL LENGTH
	2	1	6900092-002	ZIPPER TUBING PER ND1002155 TYPE 1 GREY, 0.5 IN DIA, 4 FT TOTAL LENGTH
5	3	3	1016128-021	BAND IDENTIFICATION
5	4	12	1016369-421	CONTACT, SOCKET
5	5	1	1897336-001	CONNECTOR
5	6	1	1897288-001	CONNECTOR
5	7	X	1897347-001	CONTACT, SOCKET (FURNISHED WITH ITEM 6)
5	8	1	1897391	CLAMP, CABLE DOUBLE ENTRY
	9	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A CLASS 1	FILLER TAPE .062 INCH WIDE, .020 INCH THICK
	10	AR	MIL-T-713B TYPE P, CLASS 2, BLACK	LACING TAPE
11	11	AR	MIL-I-15126F TYPE ACT	INSULATION TAPE, ELECTRICAL, PRESSURE SENSITIVE THERMOSETTING ADHESIVE, .75 PLUS OR MINUS .03 INCH WIDE (ES2716 TYPE C)

SIZE A	CODE IDENT NO. 99974	6900092
SCALE-NONE	REV LTR C	SHEET 4 OF 6

MIL 2084 9-65

CABLE ASSEMBLY W562 6900092 C

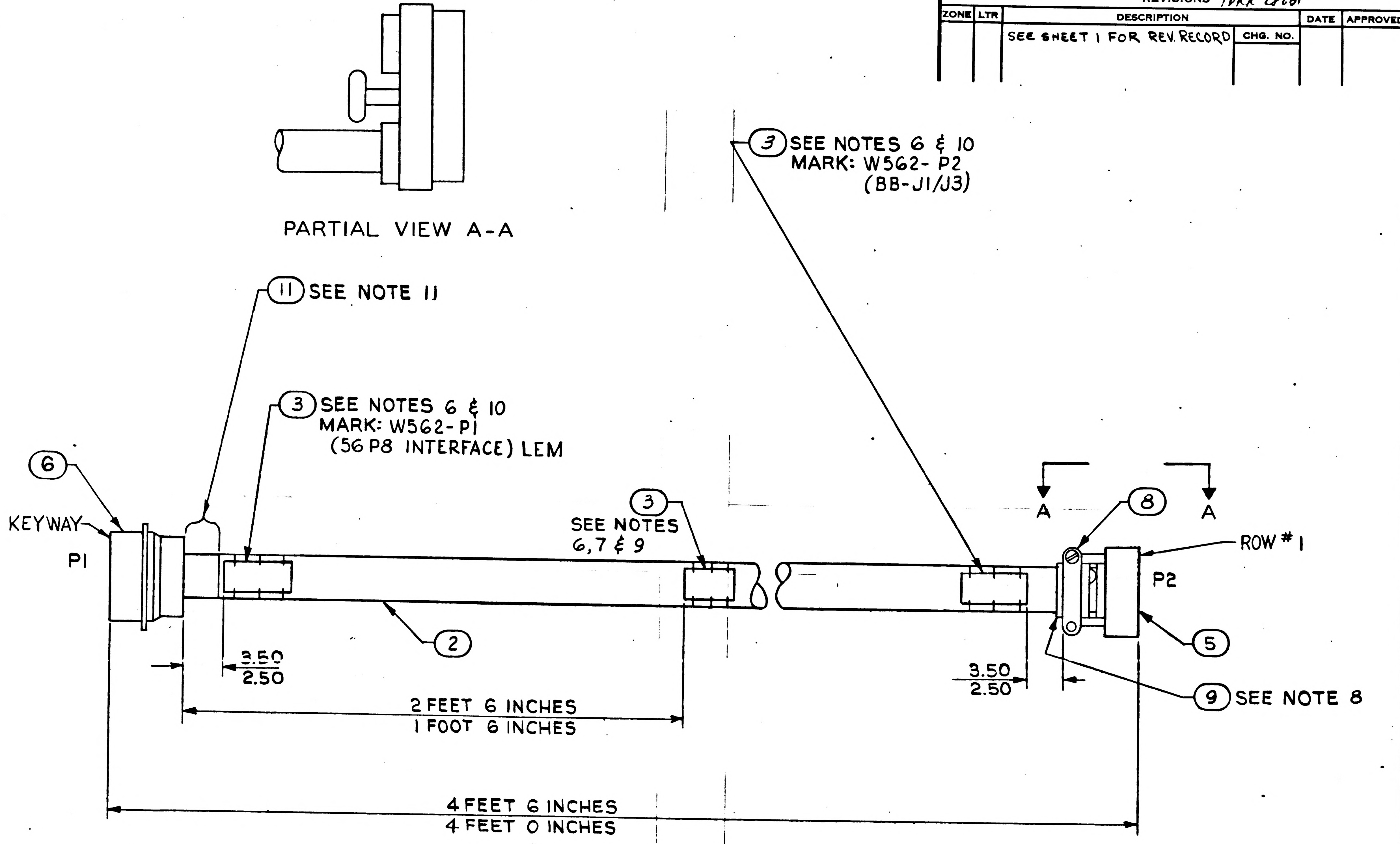
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1		P1-A P2-A3					.15 .19	NO NO		7 4	
A 2	1		P1-B P2-A4					.15 .19	NO NO		7 4	
A 3	1		P1-C P2-A5					.15 .19	NO NO		7 4	
A 4	1		P1-D P2-A6					.15 .19	NO NO		7 4	
A 5	1		P1-E P2-B1					.15 .19	NO NO		7 4	
A 6	1		P1-F P2-B2					.15 .19	NO NO		7 4	
A 7	1		P1-G P2-B3					.15 .19	NO NO		7 4	
A 8	1		P1-H P2-B4					.15 .19	NO NO		7 4	
A 9	1		P1-J P2-B5					.15 .19	NO NO		7 4	
A 10	1		P1-K P2-B6					.15 .19	NO NO		7 4	
A 11	1		P1-L P2-B7					.15 .19	NO NO		7 4	
A 12	1		P1-M P2-B8					.15 .19	NO NO		7 4	

SIZE A	CODE IDENT NO. 99974	6900092
SCALE-NONE	REV LTR C	SHEET 5 OF 6

MIL 2084 9-65

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
		SEE SHEET 1 FOR REV. RECORD			

REVISIONS TDRR 28601


PARTIAL VIEW A-A
(11) SEE NOTE 11
(3) SEE NOTES 6 & 10
MARK: W562-P1
(56 P8 INTERFACE) LEM
(6)
KEYWAY
P1
(3) SEE NOTES 6,7 & 9
(2)
3.50
2.50
2 FEET 6 INCHES
1 FOOT 6 INCHES
4 FEET 6 INCHES
4 FEET 0 INCHES
(3) SEE NOTES 6 & 10
MARK: W562- P2
(BB-J1/J3)
A
A
(8)
ROW # 1
P2
(5)
3.50
2.50
(9) SEE NOTE 8

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS. DRAWN Cm. Kulo DATE 17 FEB 66 CHECKED Molyc 22 FEB 66 APPROVAL Goldman 5/3/66 CONTRACT NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W562
DO NOT SCALE THIS DRAWING MATERIAL — APPROVAL	NASA APPROVAL MIT APPROVAL McWurly 5-10-66	SIZE C CODE IDENT NO. 99974 6900092 SCALE NONE SHEET 6 OF 6

MIL-1088D D

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

Ⓜ

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	① REPLACES WITH CHANGE REV (-) PER MXC 209708	8 MAR 66	A.N.
B	REVISED PER MXC 209933	18 MAR 66	J.H.P.
C	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	JHP EF
D	REVISED PER TDRR 29416	14 JUN-66	B.

Charleston
24 FEB 66

REV							
SHEET							
REV STATUS OF SHEETS — REV	D	C	C	D	C	C
REV STATUS OF SHEETS — SHEET	1	2	3	4	5	6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
MX116374

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN C. McKelly 17 FEB 66
DAY MO YR
CHECKER 22 FEB 66
ENGINEER
APPROVAL
CONTR NO. NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE
ELECTRICAL, W562

SIZE A
CODE IDENT. NO 99974
6900092
SCALE NONE
SHEET 1 OF 6

MIL 1377A6 12-65

CABLE ASSEMBLY W562 6900092 C

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOTE ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
4	ASSEMBLE PER ND 1002032
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 10.
7	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
8	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 9 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
9	SERIALIZE PER ND 1002032
10	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED, .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
11	TAPE HARNESS USING ITEM 11.

SIZE	CODE IDENT NO.	
A	99974	6900092
SCALE-NONE	REV LTR C	SHEET 2 OF 6

MIL 2084 9-65

CABLE ASSEMBLY W562 6900092 C

NOTE NUMBER GENERAL NOTES DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900092
SCALE-NONE	REV LTR C	SHEET 3 OF 6

MIL 2084 9-65

CABLE ASSEMBLY W562 6900092 D

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900092-001	WIRE ND1002181 TYPE 1 CLASS 1, 16 AWG WHT, 48 FT TOTAL LENGTH
	2	1	6900092-002	ZIPPER TUBING PER ND1002155 TYPE 1 GREY, 0.5 IN DIA, 4 FT TOTAL LENGTH
5	3	3	1016128-021	BAND IDENTIFICATION
5	4	12	1016369-721	CONTACT, SOCKET
5	5	1	1897336-001	CONNECTOR
5	6	1	1897288-001	CONNECTOR
5	7	X	1897347-001	CONTACT, SOCKET (FURNISHED WITH ITEM 6)
5	8	1	1897391	CLAMP, CABLE DOUBLE ENTRY
	9	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A CLASS 1	FILLER TAPE .062 INCH WIDE, .020 INCH THICK
	10	AR	MIL-T-713B TYPE P, CLASS 2, BLACK	LACING TAPE
11	11	AR	MIL-I-15126F TYPE ACT	INSULATION TAPE, ELECTRICAL, PRESSURE SENSITIVE THERMOSETTING ADHESIVE, .75 PLUS OR MINUS .03 INCH WIDE (ES2716 TYPE C)

SIZE	CODE IDENT NO.	
A	99974	6900092
SCALE-NONE	REV LTR D	SHEET 4 OF 6

MIL 2084 9-65

CABLE ASSEMBLY W562 6900092 C

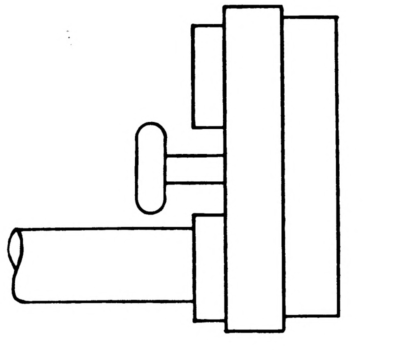
	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1		P1-A P2-A3					.15 .19	NO NO		7 4	
A	2	1		P1-B P2-A4					.15 .19	NO NO		7 4	
A	3	1		P1-C P2-A5					.15 .19	NO NO		7 4	
A	4	1		P1-D P2-A6					.15 .19	NO NO		7 4	
A	5	1		P1-E P2-B1					.15 .19	NO NO		7 4	
A	6	1		P1-F P2-B2					.15 .19	NO NO		7 4	
A	7	1		P1-G P2-B3					.15 .19	NO NO		7 4	
A	8	1		P1-H P2-B4					.15 .19	NO NO		7 4	
A	9	1		P1-J P2-B5					.15 .19	NO NO		7 4	
A	10	1		P1-K P2-B6					.15 .19	NO NO		7 4	
A	11	1		P1-L P2-B7					.15 .19	NO NO		7 4	
A	12	1		P1-M P2-B8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900092
SCALE-NONE	REV LTR C	SHEET 5 OF 6

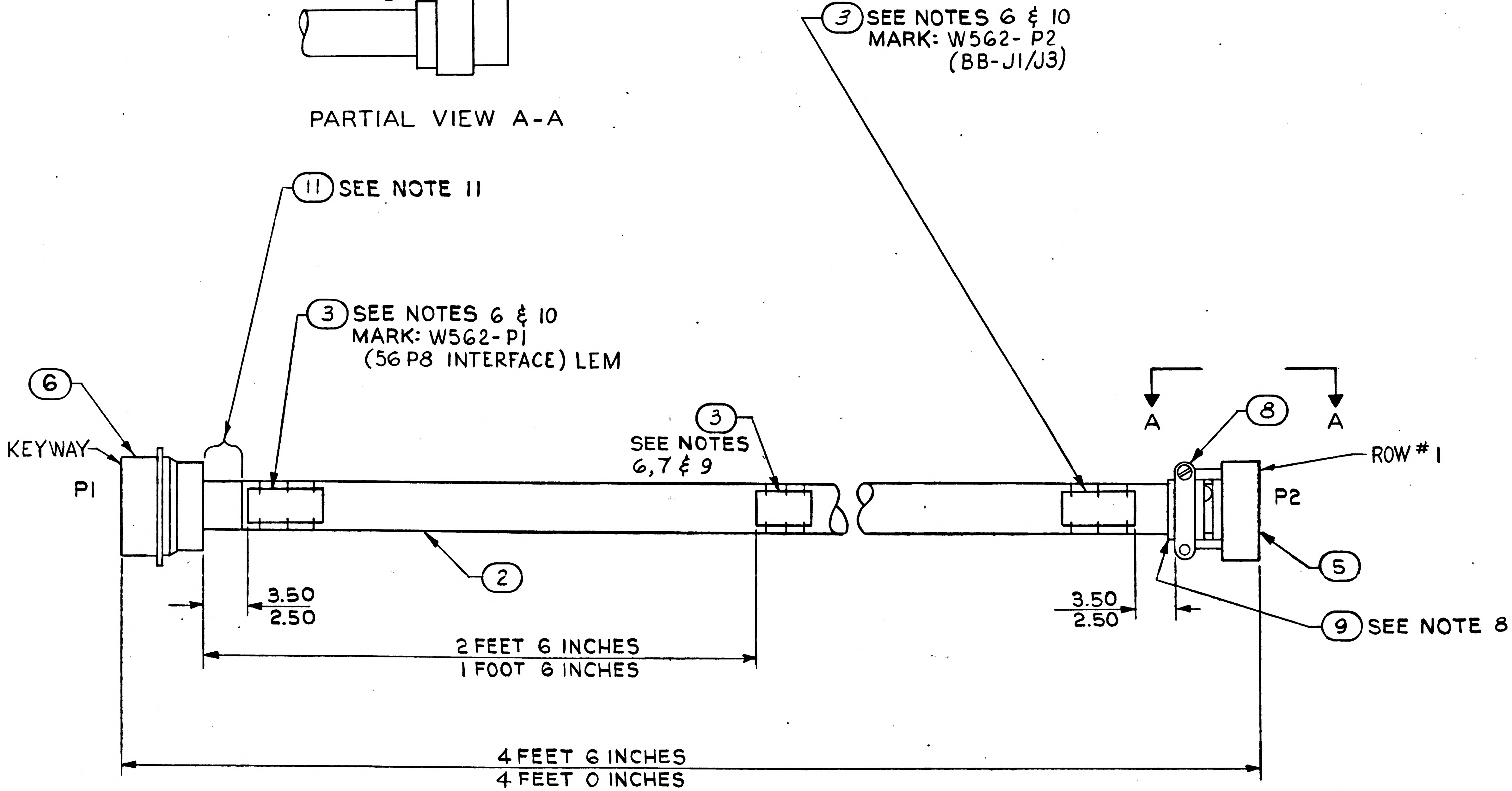
MIL 2084 9-65

REVISIONS TDRR 28601

ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1 FOR REV. RECORD CHG. NO.		



PARTIAL VIEW A-A



3 SEE NOTES 6 & 10
MARK: W562-P2
(BB-J1/J3)
11 SEE NOTE 11
3 SEE NOTES 6 & 10
MARK: W562-P1
(56 P8 INTERFACE) LEM
6
KEYWAY
P1
3
SEE NOTES
6,7 & 9
A
8
A
ROW # 1
P2
2
5
3.50
2.50
3.50
2.50
9 SEE NOTE 8
2 FEET 6 INCHES
1 FOOT 6 INCHES
4 FEET 6 INCHES
4 FEET 0 INCHES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	DRAWN Cm. Kulp DATE 17 FEB 66 CHECKED Molye 22 FEB 66 APPROVAL Goleman 5/3/66 CONTRACT NAS 9-497	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W562
DO NOT SCALE THIS DRAWING		
MATERIAL —	NASA APPROVAL	SIZE C · CODE IDENT NO. 99974 · 6900092
APPROVAL	MIT APPROVAL 5-10-66	SCALE NONE · SHEET 6 OF 6

MIL-1062D D

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACES REV(+) WITH CHANGE PER MXC 209711	9 MAR 66	
B	REVISED PER MXC 210548	1 APR 66	
C	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	PG EF

Charleston
31 JAN 66

REV STATUS OF SHEETS	REV	C	C	C	C	C	C	C	C	C	C	C	C	C
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN JANOWIAK DATE 5 JAN 66
CHECKED Moyce 6 JAN 66
APPROVAL 1-6-66
APPROVAL Gedman 5/3/66
NASA APPROVAL
MIT APPROVAL
CONTRACT NAS9-497

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, W581

CODE IDENT NO.	SIZE		REV
99974	A	6900096	C
SCALE —		SHEET 1 OF 13	

CABLE ASSEMBLY W581 6900096 C

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOTF ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
4	ASSEMBLE PER ND 1002032
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 11.
7	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 10 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
9	SERIALIZE PER ND 1002032
10	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED, .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
11	AT ASSEMBLY OF ITEM 5 TO ITEM 9, REMOVE 4 SELF LOCKING NUTS SECURING LOCATING PINS TO ITEM 5 AND DISCARD. ATTACH ITEM 5 TO ITEM 9 USING LOCATING PINS.
12	SECURE ITEM 12 TO ITEM 6 USING ITEM 13 PER MS33540.

SIZE	CODE IDENT NO.	
A	99974	6900096
SCALE-NONE	REV LTR C	SHEET 2 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W581 6900096 C

NOTE NUMBER

GENERAL NOTES DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900096
SCALE-NONE	REV LTR C	SHEET 3 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W581 6900096 C

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900096-001	WIRE ND1002181 TYPE 1 CLASS 1, 22 AWG WHT, 340 FT TOTAL LENGTH
	2	1	6900096-002	ZIPPER TUBING PER ND1002155 TYPE 1 GREY, 2 IN DIA, 4 FT TOTAL LENGTH
5	3	3	1016128-021	BAND IDENTIFICATION
5	4	85	1016369-421	CONTACT, SOCKET
5	5	1	1897336-001	CONNECTOR
5	6	1	1897249-002	CONNECTOR
5	7	X	1897190- 2	CONTACT, SOCKET (FURNISHED WITH ITEM 6)
5	8	1	1010933-105	CLAMP, STRAIN RELIEF
5	9	1	1897391	CLAMP, CABLE DOUBLE ENTRY
	10	AR	MIL-I-631 TYPE F FORM T, BLACK GRADE A, CLASS 1	FILLER TAPE, .62 WIDE, 020 THICK
	11	AR	MIL-T-713B TYPE P CLASS 2, BLACK	LACING TAPE
	12	1	1897248-102	CONNECTOR, H.S. THROUGH BULKHEAD
	13	AR	6900096-003	WIRE, LOCK MS20995C20, FORM 1, PER QQ-W-423.

SIZE	CODE IDENT NO.	
A	99974	6900096
SCALE-NONE	REV LTR C	SHEET 4 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W581 6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1		P1-1 P2-A3					.15 .19	NO NO		7 4	
A 2	1		P1-2 P2-A4					.15 .19	NO NO		7 4	
A 3	1		P1-3 P2-A5					.15 .19	NO NO		7 4	
A 4	1		P1-4 P2-A6					.15 .19	NO NO		7 4	
A 5	1		P1-5 P2-B1					.15 .19	NO NO		7 4	
A 6	1		P1-6 P2-B2					.15 .19	NO NO		7 4	
A 7	1		P1-7 P2-B3					.15 .19	NO NO		7 4	
A 8	1		P1-8 P2-B4					.15 .19	NO NO		7 4	
A 9	1		P1-9 P2-B5					.15 .19	NO NO		7 4	
A 10	1		P1-10 P2-B6					.15 .19	NO NO		7 4	
A 11	1		P1-11 P2-B7					.15 .19	NO NO		7 4	
A 12	1		P1-12 P2-B8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900096
SCALE-NONE	REV LTR C	SHEET 5 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W581

6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		P1-13 P2-C1					.15 .19	NO NO		7 4	
A 14	1		P1-14 P2-C2					.15 .19	NO NO		7 4	
A 15	1		P1-15 P2-C3					.15 .19	NO NO		7 4	
A 16	1		P1-16 P2-C4					.15 .19	NO NO		7 4	
A 17	1		P1-17 P2-C5					.15 .19	NO NO		7 4	
A 18	1		P1-18 P2-C6					.15 .19	NO NO		7 4	
A 19	1		P1-19 P2-C7					.15 .19	NO NO		7 4	
A 20	1		P1-20 P2-C8					.15 .19	NO NO		7 4	
A 21	1		P1-21 P2-D1					.15 .19	NO NO		7 4	
A 22	1		P1-22 P2-D2					.15 .19	NO NO		7 4	
A 23	1		P1-23 P2-D3					.15 .19	NO NO		7 4	
A 24	1		P1-24 P2-D4					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900096

SCALE-NONE | REV LTR C | SHEET 6 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W581

6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		P1-25 P2-D5					.15 .19	NO NO		7 4	
A 26	1		P1-26 P2-D6					.15 .19	NO NO		7 4	
A 27	1		P1-27 P2-D7					.15 .19	NO NO		7 4	
A 28	1		P1-28 P2-D8					.15 .19	NO NO		7 4	
A 29	1		P1-29 P2-E1					.15 .19	NO NO		7 4	
A 30	1		P1-30 P2-E2					.15 .19	NO NO		7 4	
A 31	1		P1-31 P2-E3					.15 .19	NO NO		7 4	
A 32	1		P1-32 P2-E4					.15 .19	NO NO		7 4	
A 33	1		P1-33 P2-E5					.15 .19	NO NO		7 4	
A 34	1		P1-34 P2-E6					.15 .19	NO NO		7 4	
A 35	1		P1-35 P2-E7					.15 .19	NO NO		7 4	
A 36	1		P1-36 P2-E8					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900096

SCALE-NONE | REV LTR C | SHEET 7 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W581

6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		P1-37 P2-F1					.15 .19	NO NO		7 4	
A 38	1		P1-38 P2-F2					.15 .19	NO NO		7 4	
A 39	1		P1-39 P2-F3					.15 .19	NO NO		7 4	
A 40	1		P1-40 P2-F4					.15 .19	NO NO		7 4	
A 41	1		P1-41 P2-F5					.15 .19	NO NO		7 4	
A 42	1		P1-42 P2-F6					.15 .19	NO NO		7 4	
A 43	1		P1-43 P2-F7					.15 .19	NO NO		7 4	
A 44	1		P1-44 P2-F8					.15 .19	NO NO		7 4	
A 45	1		P1-45 P2-G1					.15 .19	NO NO		7 4	
A 46	1		P1-46 P2-G2					.15 .19	NO NO		7 4	
A 47	1		P1-47 P2-G3					.15 .19	NO NO		7 4	
A 48	1		P1-48 P2-G4					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900096

SCALE-NONE | REV LTR C | SHEET 8 OF 13

CABLE ASSEMBLY W581

6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		P1-49 P2-G5					.15 .19	NO NO		7 4	
A 50	1		P1-50 P2-G6					.15 .19	NO NO		7 4	
A 51	1		P1-51 P2-G7					.15 .19	NO NO		7 4	
A 52	1		P1-52 P2-G8					.15 .19	NO NO		7 4	
A 53	1		P1-53 P2-H1					.15 .19	NO NO		7 4	
A 54	1		P1-54 P2-H2					.15 .19	NO NO		7 4	
A 55	1		P1-55 P2-H3					.15 .19	NO NO		7 4	
A 56	1		P1-56 P2-H4					.15 .19	NO NO		7 4	
A 57	1		P1-57 P2-H5					.15 .19	NO NO		7 4	
A 58	1		P1-58 P2-H6					.15 .19	NO NO		7 4	
A 59	1		P1-59 P2-H7					.15 .19	NO NO		7 4	
A 60	1		P1-60 P2-H8					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900096

SCALE-NONE | REV LTR C | SHEET 9 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W581 6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		P1-61 P2-J1					.15 .19	NO NO		7 4	
A 62	1		P1-62 P2-J2					.15 .19	NO NO		7 4	
A 63	1		P1-63 P2-J3					.15 .19	NO NO		7 4	
A 64	1		P1-64 P2-J4					.15 .19	NO NO		7 4	
A 65	1		P1-65 P2-J5					.15 .19	NO NO		7 4	
A 66	1		P1-66 P2-J6					.15 .19	NO NO		7 4	
A 67	1		P1-67 P2-J7					.15 .19	NO NO		7 4	
A 68	1		P1-68 P2-J8					.15 .19	NO NO		7 4	
A 69	1		P1-69 P2-K1					.15 .19	NO NO		7 4	
A 70	1		P1-70 P2-K2					.15 .19	NO NO		7 4	
A 71	1		P1-71 P2-K3					.15 .19	NO NO		7 4	
A 72	1		P1-72 P2-K6					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900096
SCALE-NONE	REV LTR C	SHEET 10 OF 13

CABLE ASSEMBLY W581 6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		P1-73 P2-K7					.15 .19	NO NO		7 4	
A 74	1		P1-74 P2-K8					.15 .19	NO NO		7 4	
A 75	1		P1-75 P2-L1					.15 .19	NO NO		7 4	
A 76	1		P1-76 P2-L2					.15 .19	NO NO		7 4	
A 77	1		P1-77 P2-L7					.15 .19	NO NO		7 4	
A 78	1		P1-78 P2-L8					.15 .19	NO NO		7 4	
A 79	1		P1-79 P2-M1					.15 .19	NO NO		7 4	
A 80	1		P1-80 P2-M2					.15 .19	NO NO		7 4	
A 81	1		P1-81 P2-M3					.15 .19	NO NO		7 4	
A 82	1		P1-82 P2-M6					.15 .19	NO NO		7 4	
A 83	1		P1-83 P2-M7					.15 .19	NO NO		7 4	
A 84	1		P1-84 P2-M8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900096
SCALE-NONE	REV LTR C	SHEET 11 OF 13

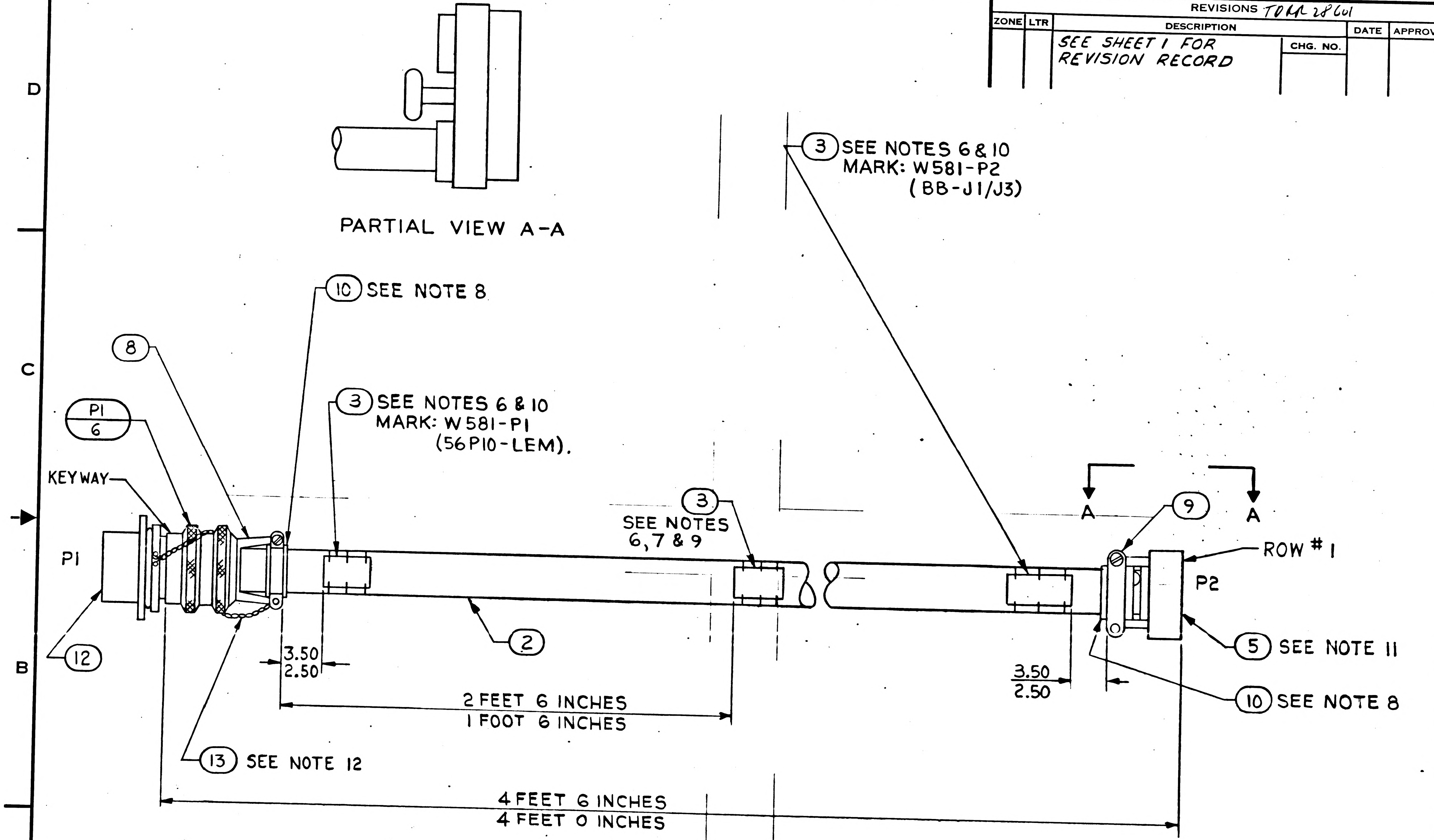
CABLE ASSEMBLY W581 6900096 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 85	1		P1-85 P2-N1					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900096
SCALE-NONE	REV LTR C	SHEET 12 OF 13

REVISIONS TOAR 28601

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
		SEE SHEET 1 FOR REVISION RECORD			


PARTIAL VIEW A-A
10 SEE NOTE 8
8
P1
6
KEYWAY
P1
3 SEE NOTES 6 & 10
MARK: W581-P1
(56P10-LEM).
3 SEE NOTES 6 & 10
MARK: W581-P2
(BB-J1/J3)
3
SEE NOTES
6, 7 & 9
A
9
A
ROW # 1
P2
2
12
3.50
2.50
2 FEET 6 INCHES
1 FOOT 6 INCHES
3.50
2.50
5 SEE NOTE 11
10 SEE NOTE 8
13 SEE NOTE 12
4 FEET 6 INCHES
4 FEET 0 INCHES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS + _ − _
3 PLACE DECIMALS + _ − _
ANGLES + _ − _

DO NOT SCALE THIS DRAWING

MATERIAL

APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN JANOWIAK DATE 5 JAN 66
CHECKED Moyle 6 JAN 66
APPROVAL L Glumman 5/3/66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL MG Meuler 5-10-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W581

SIZE C
CODE IDENT NO. 99974
6900096
SCALE NONE
SHEET 13 OF 13

MIL-1082D D

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	REPLACES REV (-) WITH CHANGE PER MXC 209712	8 MAR 66	MTY
B	REVISED PER MXC 209934	21 MAR 66	J.H.P.
C	REVISED PER MXC 210606	6 APR 66	MK AU
D	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	JHP EF

Charleston
24 FEB 66

REV STATUS OF SHEETS	REV	D	D	D	D	D	D	D	D	D	D	D
	SHEET	1	2	3	4	5	6	7	8	9	10	11

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
MX116376

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN C.M. Kulo 21 FEB 66 (DAY MO YR)
CHECKER McKye 22 FEB 66
ENGINEER 2-22-66
APPROVAL
CONTR NO. NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, W585

SIZE A
CODE IDENT. NO 99974
6900097
SCALE NONE
SHEET 1 OF 11

MIL 1377A6 12-65

CABLE ASSEMBLY W585 6900097 D

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOTE ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
4	ASSEMBLE PER ND 1002032
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 11.
7	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
8	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 10 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
9	SERIALIZE PER ND 1002032
10	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED, .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
11	SECURE ITEM 12 TO ITEM 6 USING ITEM 13 PER MS33540.

SIZE A	CODE IDENT NO. 99974	6900097
SCALE-NONE	REV LTR D	SHEET 2 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W585 6900097 D

NOTE NUMBER GENERAL NOTES DESCRIPTION

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE A	CODE IDENT NO. 99974	6900097
SCALE-NONE	REV LTR D	SHEET 3 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W585 6900097 D

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900097-001	WIRE ND1002181 TYPE 1 CLASS 1, 22 AWG WHT, 244 FT TOTAL LENGTH
	2	1	6900097-002	ZIPPER TUBING PER ND1002155 TYPE 1 GREY, 1.5 IN DIA, 4 FT TOTAL LENGTH
5	3	3	1016128-021	BAND IDENTIFICATION
5	4	61	1016369-421	CONTACT, SOCKET
5	5	1	1897336-001	CONNECTOR
5	6	1	1897249-006	CONNECTOR
5	7	X	1897190- 2	CONTACT, SOCKET (FURNISHED WITH ITEM 6)
5	8	1	1010933-104	CLAMP, STRAIN RELIEF
5	9	1	1897391	CLAMP, CABLE DOUBLE ENTRY
	10	AR	MIL-I-631 TYPE F, FORM T BLACK GRADE A, CLASS 1	FILLER TAPE, .62 INCH WIDE, .020 INCH THICK
	11	AR	MIL-T-713B TYPE P, CLASS 2, BLACK	LACING TAPE
	12	1	1897248-106	CONNECTOR, H.S. THROUGH BULKHEAD
	13	AR	6900097-003	WIRE, LOCK MS20995C20, FORM 1 PER QQ-W-423

SIZE A	CODE IDENT NO. 99974	6900097
SCALE-NONE	REV LTR D	SHEET 4 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W585 6900097 D

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1		P1-1 P2-A3					.15 .19	NO NO		7 4	
A	2	1		P1-2 P2-A4					.15 .19	NO NO		7 4	
A	3	1		P1-3 P2-A5					.15 .19	NO NO		7 4	
A	4	1		P1-4 P2-A6					.15 .19	NO NO		7 4	
A	5	1		P1-5 P2-B1					.15 .19	NO NO		7 4	
A	6	1		P1-6 P2-B2					.15 .19	NO NO		7 4	
A	7	1		P1-7 P2-B3					.15 .19	NO NO		7 4	
A	8	1		P1-8 P2-B4					.15 .19	NO NO		7 4	
A	9	1		P1-9 P2-B5					.15 .19	NO NO		7 4	
A	10	1		P1-10 P2-B6					.15 .19	NO NO		7 4	
A	11	1		P1-11 P2-B7					.15 .19	NO NO		7 4	
A	12	1		P1-12 P2-B8					.15 .19	NO NO		7 4	

SIZE A	CODE IDENT NO. 99974	6900097
SCALE-NONE	REV LTR D	SHEET 5 OF 11

MIL 2084 9-65

CABLE ASSEMBLY W585 6900097 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		P1-13 P2-C1					.15 .19	NO NO		7 4	
A 14	1		P1-14 P2-C2					.15 .19	NO NO		7 4	
A 15	1		P1-15 P2-C3					.15 .19	NO NO		7 4	
A 16	1		P1-16 P2-C4					.15 .19	NO NO		7 4	
A 17	1		P1-17 P2-C5					.15 .19	NO NO		7 4	
A 18	1		P1-18 P2-C6					.15 .19	NO NO		7 4	
A 19	1		P1-19 P2-C7					.15 .19	NO NO		7 4	
A 20	1		P1-20 P2-C8					.15 .19	NO NO		7 4	
A 21	1		P1-21 P2-D1					.15 .19	NO NO		7 4	
A 22	1		P1-22 P2-D2					.15 .19	NO NO		7 4	
A 23	1		P1-23 P2-D3					.15 .19	NO NO		7 4	
A 24	1		P1-24 P2-D4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900097
SCALE-NONE	REV LTR D	SHEET 6 OF 11

CABLE ASSEMBLY W585 6900097 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		P1-25 P2-D5					.15 .19	NO NO		7 4	
A 26	1		P1-26 P2-D6					.15 .19	NO NO		7 4	
A 27	1		P1-27 P2-D7					.15 .19	NO NO		7 4	
A 28	1		P1-28 P2-D8					.15 .19	NO NO		7 4	
A 29	1		P1-29 P2-E1					.15 .19	NO NO		7 4	
A 30	1		P1-30 P2-E2					.15 .19	NO NO		7 4	
A 31	1		P1-31 P2-E3					.15 .19	NO NO		7 4	
A 32	1		P1-32 P2-E4					.15 .19	NO NO		7 4	
A 33	1		P1-33 P2-E5					.15 .19	NO NO		7 4	
A 34	1		P1-34 P2-E6					.15 .19	NO NO		7 4	
A 35	1		P1-35 P2-E7					.15 .19	NO NO		7 4	
A 36	1		P1-36 P2-E8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900097
SCALE-NONE	REV LTR D	SHEET 7 OF 11

CABLE ASSEMBLY W585 6900097 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		P1-37 P2-F1					.15 .19	NO NO		7 4	
A 38	1		P1-38 P2-F2					.15 .19	NO NO		7 4	
A 39	1		P1-39 P2-F3					.15 .19	NO NO		7 4	
A 40	1		P1-40 P2-F4					.15 .19	NO NO		7 4	
A 41	1		P1-41 P2-F5					.15 .19	NO NO		7 4	
A 42	1		P1-42 P2-F6					.15 .19	NO NO		7 4	
A 43	1		P1-43 P2-F7					.15 .19	NO NO		7 4	
A 44	1		P1-44 P2-F8					.15 .19	NO NO		7 4	
A 45	1		P1-45 P2-G1					.15 .19	NO NO		7 4	
A 46	1		P1-46 P2-G2					.15 .19	NO NO		7 4	
A 47	1		P1-47 P2-G3					.15 .19	NO NO		7 4	
A 48	1		P1-48 P2-G4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900097
SCALE-NONE	REV LTR D	SHEET 8 OF 11

CABLE ASSEMBLY W585 6900097 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		P1-49 P2-G5					.15 .19	NO NO		7 4	
A 50	1		P1-50 P2-G6					.15 .19	NO NO		7 4	
A 51	1		P1-51 P2-G7					.15 .19	NO NO		7 4	
A 52	1		P1-52 P2-G8					.15 .19	NO NO		7 4	
A 53	1		P1-53 P2-H1					.15 .19	NO NO		7 4	
A 54	1		P1-54 P2-H2					.15 .19	NO NO		7 4	
A 55	1		P1-55 P2-H3					.15 .19	NO NO		7 4	
A 56	1		P1-56 P2-H4					.15 .19	NO NO		7 4	
A 57	1		P1-57 P2-H5					.15 .19	NO NO		7 4	
A 58	1		P1-58 P2-H6					.15 .19	NO NO		7 4	
A 59	1		P1-59 P2-H7					.15 .19	NO NO		7 4	
A 60	1		P1-60 P2-H8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900097
SCALE-NONE	REV LTR D	SHEET 9 OF 11

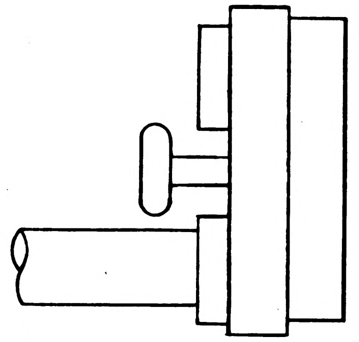
CABLE ASSEMBLY W585 6900097 D

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		P1-61					.15	NO		7	
			P2-J1					.19	NO		4	

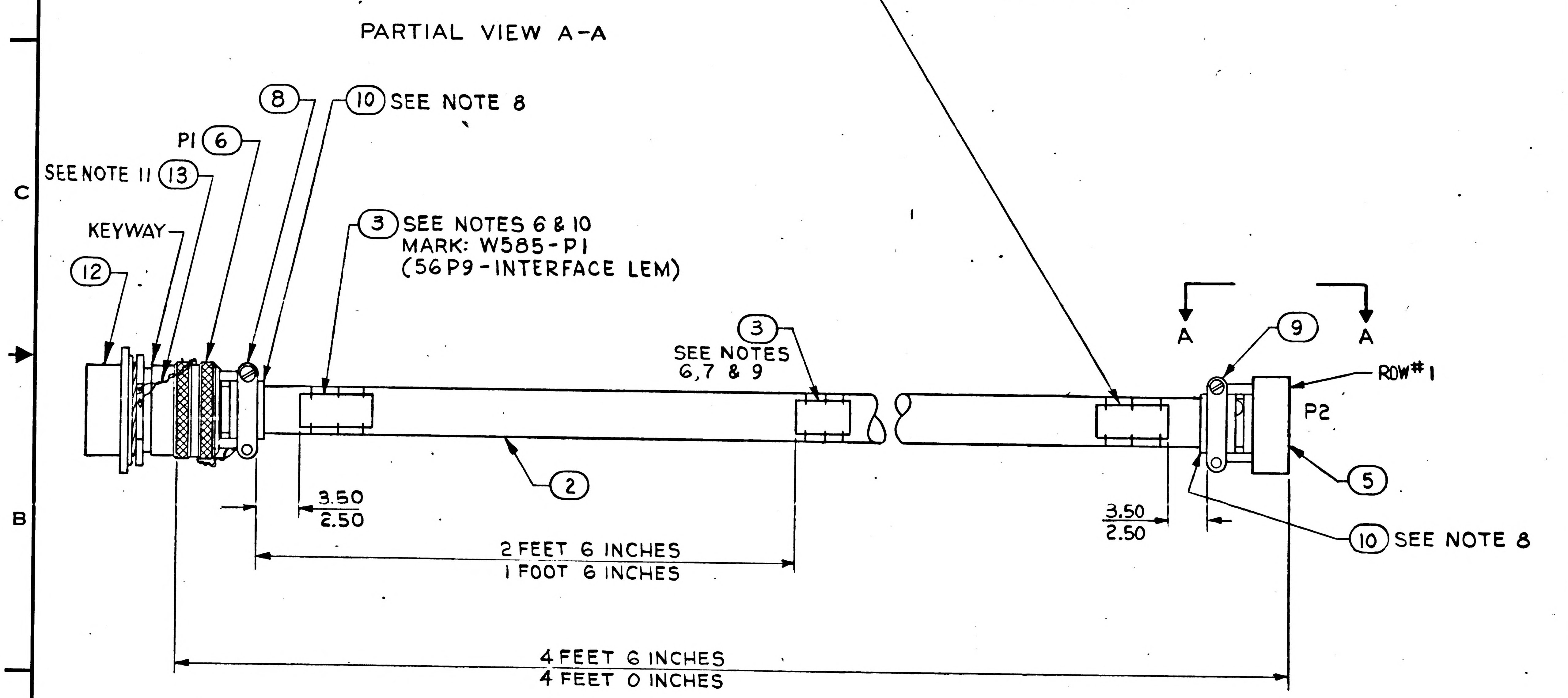
SIZE A	CODE IDENT NO. 99974	6900097
SCALE-NONE	REV LTR D	SHEET 10 OF 11

MIL 2084 9-65

REVISIONS TDRR 28601					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
		SEE SHEET 1 FOR REV. RECORD			



PARTIAL VIEW A-A


③ SEE NOTES 6 & 10
MARK: W585-P2
(BB-J1/J3)
⑧
⑩ SEE NOTE 8
P1 ⑥
SEE NOTE 11 ⑬
KEYWAY
⑫
③ SEE NOTES 6 & 10
MARK: W585-P1
(56P9-INTERFACE LEM)
③
SEE NOTES
6,7 & 9
A
⑨
A
ROW# 1
P2
②
⑤
3.50
2.50
3.50
2.50
⑩ SEE NOTE 8
2 FEET 6 INCHES
1 FOOT 6 INCHES
4 FEET 6 INCHES
4 FEET 0 INCHES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN C.M. Kulo 21 FEB 66 DATE CHECKED Trudge 22 FEB 66 APPROVAL L Gehman 5/3/66 CONTRACT NAS 9-497	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W585
MATERIAL —	NASA APPROVAL A. C. M.	SIZE C — CODE IDENT NO. 99974 — 6900097
APPROVAL	MIT APPROVAL W. G. Muller 5-13-66	SCALE NONE — SHEET 11 OF 11

MIL-1062D D

6900097

APPLICATION	
NEXT ASSY	USED ON
6900043-021	1900030

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER D.O. 61662	22 FEB 66	
B	INITIAL RELEASE CLASS A PER TDRR 27524	23 FEB 66	RWH JAC

REV STATUS	REV	B	B	B	B	B	B	B	B	B
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. · MILWAUKEE WIS.

DRAWN Frank R. Waller 10 JAN 66
DATE Dr. Manning 28 JAN 66
CHECKED
APPROVAL C. W. Weis 25 JAN 66
APPROVAL 3-21-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL-W137

CODE IDENT NO. 99974
SIZE A
6900099
REV B
SCALE —
SHEET 1 OF 9

CABLE ASSEMBLY W137 6900099

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOT APPLICABLE
2	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
3	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019
4	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	ITEM 10 AND 13 FURNISHED WITH ITEM 2.
7	GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING ITEM 13.
8	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
9	SOLDER PER MIL-S-6872 (ES2502-1) USING ITEM 5 OR ITEMS 15 AND 16.
10	SECURE TO CABLE USING ITEM 12, MARKING TO READ AWAY FROM CONNECTOR. ALIGN CENTER LINES OF BANDS AND CONNECTOR MASTER KEY SLOTS TO BE COLLINEAR WITHIN + OR - 0.25 IN.
11	SERIALIZE PER ND1002023.
12	MARK IDENTIFICATION BANDS AS NOTED ON DRAWING, PER ND1002019. CENTRALIZE.
13	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 11 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
14	STAGGER E POINTS TO ELIMINATE BULK.
15	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
16	ASSEMBLE PER ND1002032.

SIZE	CODE IDENT NO.		
A	99974	6900099	
SCALE-NONE	REV LTR B	SHEET 2 OF 9	

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099

NOTE NUMBER	GENERAL NOTES DESCRIPTION
17	ZIPPER TUBING SHALL HAVE Z TYPE TRACK WITH .003 + .001 - .001 THICKNESS ALUMINUM FOIL.
18	SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE IN E7-8 AND E9-8 RESPECTIVELY.
19	SEE NOTES 5, 6 AND 7
20	SEE NOTES 5 AND 6

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

SIZE	CODE IDENT NO.		
A	99974	6900099	
SCALE-NONE	REV LTR B	SHEET 3 OF 9	

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099 A

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900099-001	WIRE, ND1002181, CLASS 1, TYPE 1, 16AWG WHT, 110 FT. TOTAL LENGTH
5	2	1	1897288-001	CONNECTOR RECEPTACLE
5	3	1	1897232-231	CONNECTOR PLUG
5	4	5	1016006-002	SPLICE REDUCER
	5	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
5	6	1	1016128-011	BAND-IDENTIFICATION BLANK
5	7	2	1016128-041	BAND-IDENTIFICATION BLANK
5	8	7	1010490-258	INSULATION SLEEVING
5	9	1	1897315-006	CLAMP, STRAIN RELIEF
20	10	X	1897348-002	CONTACT SOCKETS
	11	AR	MIL-I-631	FILLER TAPE, TYPE F, FORM T, (BLACK), GRADE A CLASS I, .625 WIDE, .020 THICK.
	12	AR	MIL-T-713 B	LACING TAPE, CLASS 2, TYPE P, BLACK (ES2732 NO. 18)
19	13	X	1010958-005	SEALING PLUG
17	14	1	6900099-002	ZIPPER TUBING PER ND1002155, TYPE III, .75 DIA, 6 FT. TOTAL LENGTH
	15	AR	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
	16	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)

SIZE	CODE IDENT NO.		
A	99974	6900099	
SCALE-NONE	REV LTR ~~A~~ B	SHEET 4 OF 9	

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099 ~~A~~

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
5	17	1	1016006-003	SPLICE REDUCER
5	18	1	1010490-256	INSULATION SLEEVING
5	19	2	1015902- 49	TERMINAL LUG
5	20	1	1016006-003	SPLICE REDUCER
5	21	1	1016006-004	SPLICE REDUCER
5	22	1	1010490-256	INSULATION, SLEEVING
5	23	1	1010490-312	INSULATION, SLEEVING
5	24	1	1016282-18	GROMMET, RUBBER
5	25	1	1016282- 24	GROMMET, RUBBER

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR ~~A~~ B	SHEET 5 OF 9

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1		P1-K E1-B					.28 .38	YES NO			
A	2	1		P1-O E1-B					.28 .38	YES NO			
A	3	1		E1-BB J1-F					.38 .18	NO NO		10	
A	4	1		P1-L E2-B					.28 .38	YES NO			
A	5	1		P1-P E2-B					.28 .38	YES NO			
A	6	1		E2-BB J1-G					.38 .18	NO NO		10	
A	7	1		P1-A E3-B					.28 .38	YES NO			
A	8	1		P1-E E3-B					.28 .38	YES NO			
A	9	1		E3-BB J1-K					.38 .18	NO NO		10	
A	10	1		P1-B E4-B					.28 .38	YES NO			
A	11	1		P1-G E4-B					.28 .38	YES NO			
A	12	1		P1-N E4-B					.28 .38	YES NO			

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR B	SHEET 6 OF 9

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	13	1		E4-BB J1-M					.38 .18	NO NO		10	
A	14	1		P1-C E3-B					.28 .25	YES NO			
A	15	1		P1-U E6-BB					.28 .38	YES YES			
A	16	1		P1-D E4-B					.28 .38	YES NO			
A	17	1		P1-H E5-B					.28 .38	YES NO			
A	18	1		P1-F E5-B					.28 .38	YES NO			
A	19	1		E5-BB J1-L					.38 .18	NO NO		10	
A	20	1		P1-M J1-C					.28 .18	YES NO		10	
A	21	1		P1-C* EC-B					.28 .38	YES NO			
A	22	1		P1-K* E6-B					.28 .38	YES NO			
A	23	1		F7-BB E8					.38 .17	NO NO			
A	24	1		E9-BB E10					.38 .17	NO NO			

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR B	SHEET 7 OF 9

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	25	1		E1-B J1-D					.38 .18	NO NO		10	
A	26	1		E1-B J1-E					.38 .18	NO NO		10	
A	27	1		E4-B J1-H					.38 .18	NO NO		10	
A	28	1		E4-BB J1-J					.38 .18	NO NO		10	

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR B	SHEET 8 OF 9

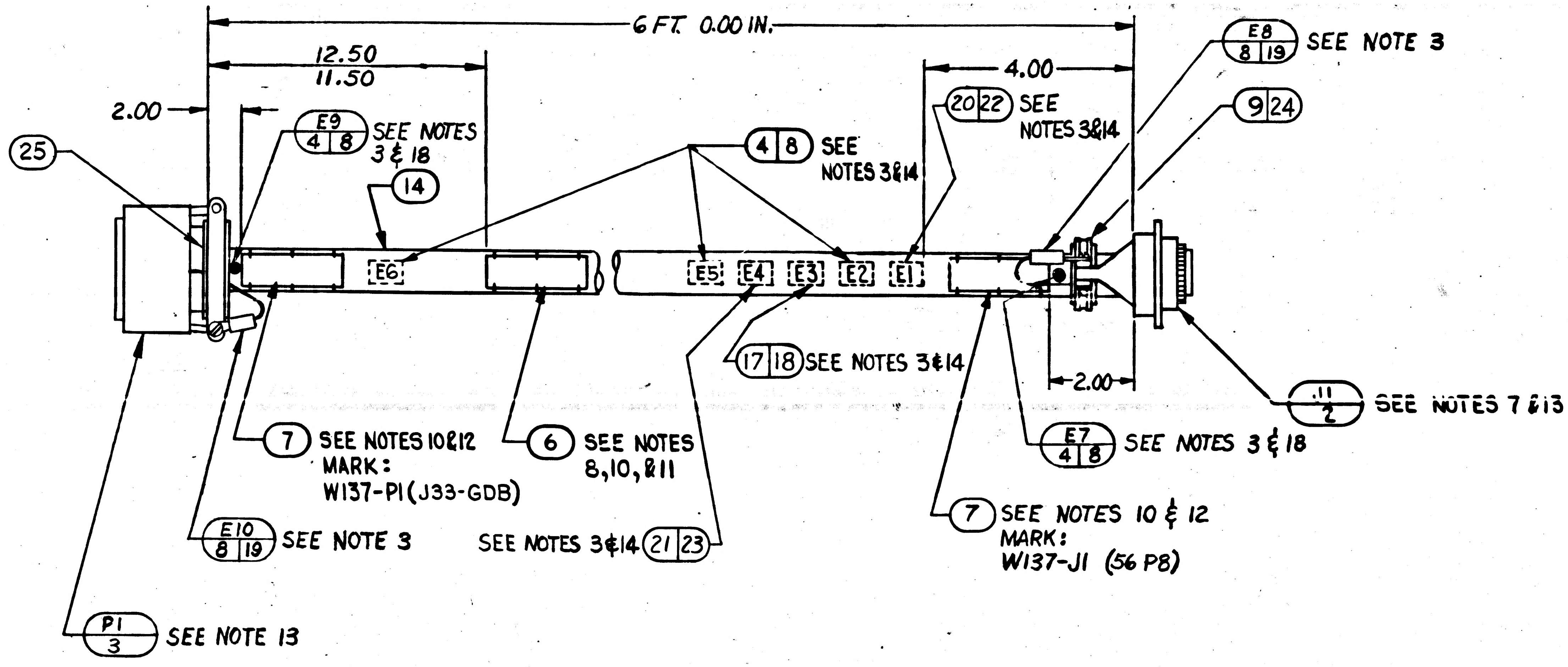
MIL 2084 9-65

6600069

6900099

REVISIONS TDRR 27524

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD			



6 FT. 0.00 IN.
12.50
11.50
2.00
4.00
2.00
25
E9 / 4 8 SEE NOTES 3 & 18
14
4 8 SEE NOTES 3&14
20 22 SEE NOTES 3&14
E8 / 8 19 SEE NOTE 3
9 24
E6
E5
E4
E3
E2
E1
17 18 SEE NOTES 3&14
.11 / 2 SEE NOTES 7 & 13
E7 / 4 8 SEE NOTES 3 & 18
7 SEE NOTES 10&12 MARK: W137-P1 (J33-GDB)
6 SEE NOTES 8,10,&11
E10 / 8 19 SEE NOTE 3
SEE NOTES 3&14 21 23
7 SEE NOTES 10 & 12 MARK: W137-J1 (56 P8)
P1 / 3 SEE NOTE 13

6900043-02	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS +.50 -.50
3 PLACE DECIMALS + __ -
ANGLES + __ -
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Frank R. Walker DATE 14 JAN 66
CHECKED R. Manning 25 JAN 66
APPROVAL C. W. Wise 25 JAN 66
CONTRACT
NASA APPROVAL A. C. METZGER
MIT APPROVAL 29 Mar 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL-W137

SIZE C
CODE IDENT NO. 99974
6900099
SCALE NONE
SHEET 9 OF 9

APPLICATION	
NEXT ASSY	USED ON
6900043-021	1900030

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER D.O. 61662	22 FEB 66	
B	INITIAL RELEASE CLASS A PER TDRR 27524	23 FEB 66	RWH JAC
C	REVISED PER TDRR 27695	14 APR 66	RWH

REV STATUS OF SHEETS	REV	C	B	B	B	B	B	B	B	C
	SHEET	1	2	3	4	5	6	7	8	9

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN Frank R. Walker DATE 10 JAN 66
CHECKED M. Manning 28 JAN 66
APPROVAL 25 JAN 66
APPROVAL J. M. Watson 3-21-66

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL-W137

NASA APPROVAL A. C. METZGER
MIT APPROVAL
CONTRACT NAS 9-497

CODE IDENT NO.	SIZE		REV
99974	A	6900099	C

SCALE —— SHEET 1 OF 9

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOT APPLICABLE
2	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
3	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019
4	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	ITEM 10 AND 13 FURNISHED WITH ITEM 2.
7	GROMMET HOLES WITHOUT LEADS SHALL BE SEALED USING ITEM 13.
8	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
9	SOLDER PER MIL-S-6872 (ES2502-1) USING ITEM 5 OR ITEMS 15 AND 16.
10	SECURE TO CABLE USING ITEM 12, MARKING TO READ AWAY FROM CONNECTOR. ALIGN CENTER LINES OF BANDS AND CONNECTOR MASTER KEY SLOTS TO BE COLLINEAR WITHIN + OR - 0.25 IN.
11	SERIALIZE PER ND1002023.
12	MARK IDENTIFICATION BANDS AS NOTED ON DRAWING, PER ND1002019. CENTRALIZE.
13	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 11 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
14	STAGGER E POINTS TO ELIMINATE BULK.
15	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
16	ASSEMBLE PER ND1002032.

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR B	SHEET 2 OF 9

NOTE NUMBER	GENERAL NOTES DESCRIPTION
17	ZIPPER TUBING SHALL HAVE Z TYPE TRACK WITH .003 + .001 - .001 THICKNESS ALUMINUM FOIL.
18	SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE IN E7-B AND E9-B RESPECTIVELY.
19	SEE NOTES 5, 6 AND 7
20	SEE NOTES 5 AND 6

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR B	SHEET 3 OF 9

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900099-001	WIRE, ND1002181, CLASS 1, TYPE 1, 16AWG WHT, 110 FT. TOTAL LENGTH
5	2	1	1897288-001	CONNECTOR RECEPTACLE
5	3	1	1897232-231	CONNECTOR PLUG
5	4	5	1016006-002	SPLICE REDUCER
	5	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
5	6	1	1016128-011	BAND-IDENTIFICATION BLANK
5	7	2	1016128-041	BAND-IDENTIFICATION BLANK
5	8	7	1010490-258	INSULATION SLEEVING
5	9	1	1897315-006	CLAMP, STRAIN RELIEF
20	10	X	1897348-002	CONTACT SOCKETS
	11	AR	MIL-I-631	FILLER TAPE, TYPE F, FORM T, (BLACK), GRADE A CLASS I, .625 WIDE, .020 THICK.
	12	AR	MIL-T-713 B	LACING TAPE, CLASS 2, TYPE P, BLACK (ES2732 NO. 18)
19	13	X	1010958-005	SEALING PLUG
17	14	1	6900099-002	ZIPPER TUBING PER ND1002155, TYPE III, .75 DIA, 6 FT. TOTAL LENGTH
	15	AR	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
	16	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR ~~A~~ B	SHEET 4 OF 9

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
5	17	1	1016006-003	SPLICE REDUCER
5	18	1	1010490-256	INSULATION SLEEVING
5	19	2	1015902- 49	TERMINAL LUG
5	20	1	1016006-003	SPLICE REDUCER
5	21	1	1016006-004	SPLICE REDUCER
5	22	1	1010490-256	INSULATION, SLEEVING
5	23	1	1010490-312	INSULATION, SLEEVING
5	24	1	1016282-18	GROMMET, RUBBER
5	25	1	1016282-24	GROMMET, RUBBER

SIZE	CODE IDENT NO.	
A	99974	6900099
SCALE-NONE	REV LTR ~~A~~ B	SHEET 5 OF 9

CABLE ASSEMBLY W137 6900099

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1		P1-K					.28	YES			
			E1-B					.38	NO			
A 2	1		P1-O					.28	YES			
			E1-B					.38	NO			
A 3	1		F1-BB					.38	NO			
			J1-F					.18	NO		10	
A 4	1		P1-L					.28	YES			
			E2-B					.38	NO			
A 5	1		P1-P					.28	YES			
			E2-B					.38	NO			
A 6	1		F2-BB					.38	NO			
			J1-G					.18	NO		10	
A 7	1		P1-A					.28	YES			
			E3-B					.38	NO			
A 8	1		P1-E					.28	YES			
			E3-B					.38	NO			
A 9	1		E3-BB					.38	NO			
			J1-K					.18	NO		10	
A 10	1		P1-R					.28	YES			
			E4-B					.38	NO			
A 11	1		P1-G					.28	YES			
			E4-B					.38	NO			
A 12	1		P1-N					.28	YES			
			E4-B					.38	NO			

SIZE	CODE IDENT NO.			
A	99974	6900099		
SCALE-NONE	REV LTR	B	SHEET	6 OF 9

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		E4-BB					.38	NO			
			J1-M					.18	NO		10	
A 14	1		P1-C					.28	YES			
			E3-B					.25	NO			
A 15	1		P1-U					.28	YES			
			E6-BB					.38	YES			
A 16	1		P1-D					.28	YES			
			E4-B					.38	NO			
A 17	1		P1-H					.28	YES			
			E5-B					.38	NO			
A 18	1		P1-F					.28	YES			
			E5-B					.38	NO			
A 19	1		E5-BB					.38	NO			
			J1-L					.18	NO		10	
A 20	1		P1-M					.28	YES			
			J1-C					.18	NO		10	
A 21	1		P1-C*					.28	YES			
			EC-B					.38	NO			
A 22	1		P1-K*					.28	YES			
			E6-B					.38	NO			
A 23	1		E7-BB					.38	NO			
			E8					.17	NO			
A 24	1		E9-BB					.38	NO			
			E10					.17	NO			

SIZE	CODE IDENT NO.			
A	99974	6900099		
SCALE-NONE	REV LTR	B	SHEET	7 OF 9

MIL 2084 9-65

CABLE ASSEMBLY W137 6900099

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		E1-B					.38	NO			
			J1-D					.18	NO		10	
A 26	1		F1-B					.38	NO			
			J1-E					.18	NO		10	
A 27	1		F4-B					.38	NO			
			J1-H					.18	NO		10	
A 28	1		F4-BB					.38	NO			
			J1-J					.18	NO		10	

SIZE	CODE IDENT NO.			
A	99974	6900099		
SCALE-NONE	REV LTR	B	SHEET	8 OF 9

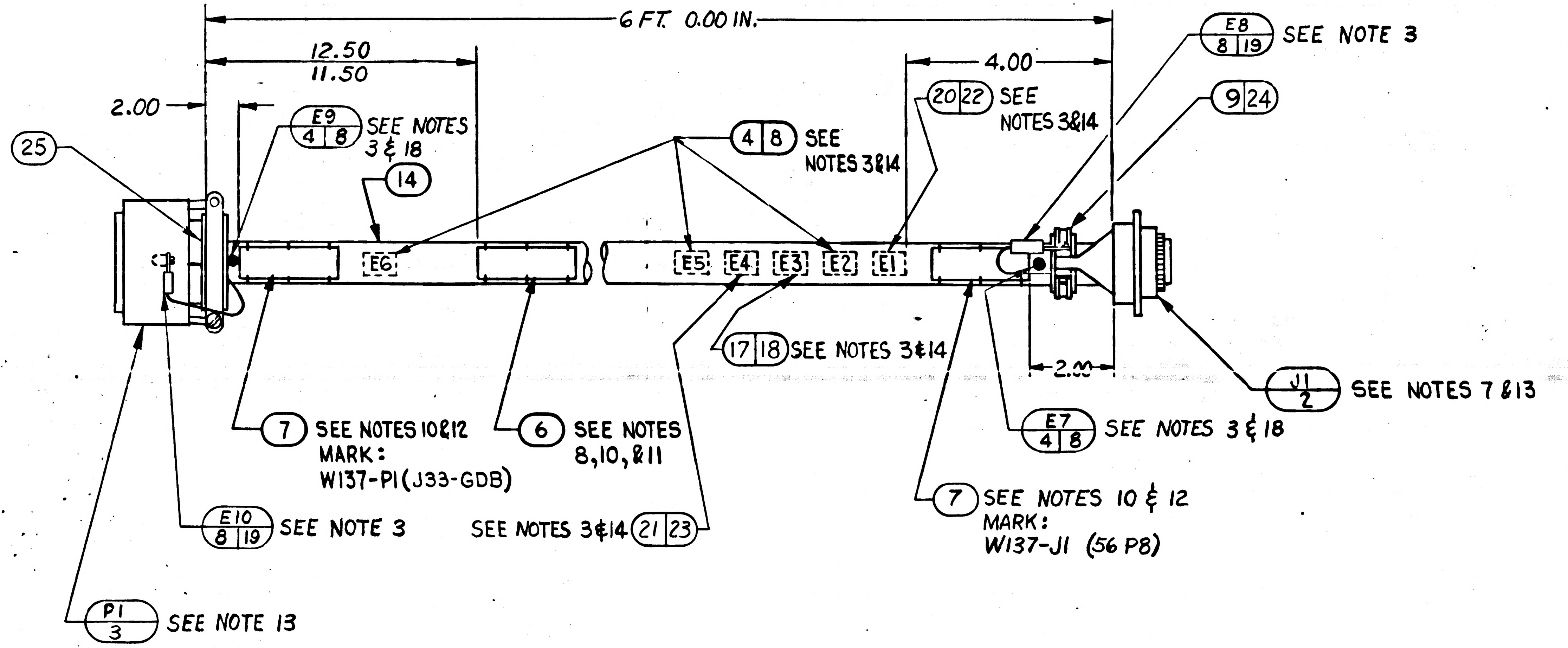
MIL 2084 9-65

6600069

1 6900099

REVISIONS TDRR 27524

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
(M)		SEE SHEET 1 FOR REVISION RECORD			


6 FT. 0.00 IN.
12.50
11.50
4.00
2.00
(25)
E9 / 4 8 SEE NOTES 3 & 18
(14)
4 8 SEE NOTES 3&14
20 22 SEE NOTES 3&14
E8 / 8 19 SEE NOTE 3
9 24
E6
E5
E4
E3
E2
E1
2.00
J1 / 2 SEE NOTES 7 & 13
17 18 SEE NOTES 3&14
E7 / 4 8 SEE NOTES 3 & 18
(7) SEE NOTES 10&12 MARK: W137-P1 (J33-GDB)
(6) SEE NOTES 8, 10, & 11
(7) SEE NOTES 10 & 12 MARK: W137-J1 (56 P8)
E10 / 8 19 SEE NOTE 3
SEE NOTES 3&14 21 23
P1 / 3 SEE NOTE 13

6900043-02	1900030
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS +.50 -.50
3 PLACE DECIMALS + — -
ANGLES + — -
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Frank R. Walker DATE 14 JAN 66
CHECKED 25 JAN 66
APPROVAL C W Wise 25 JAN 66
CONTRACT
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL-W137

SIZE C
CODE IDENT NO. 99974
6900099
SCALE NONE
SHEET 9 OF 9

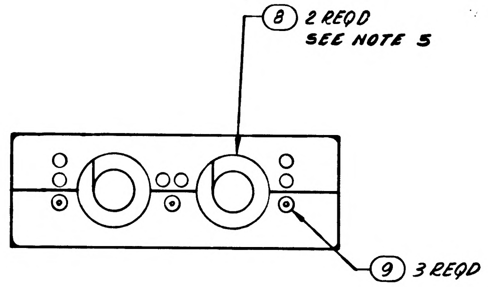
MIL 1077C-P

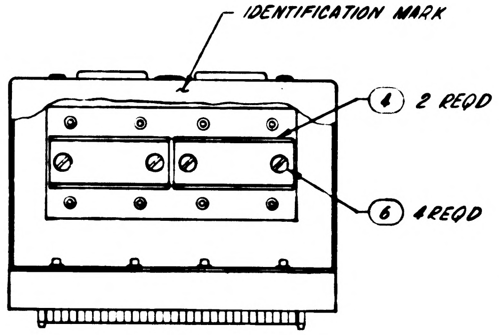
6900099 C

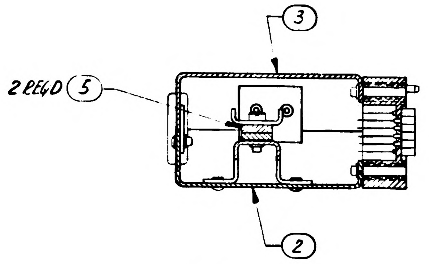
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REVISED PER MXC 210070	17 MAR 66	LK
	B	-INITIAL RELEASE CLASS A PER TDRR 283	3 MAY 66	

NOTES:

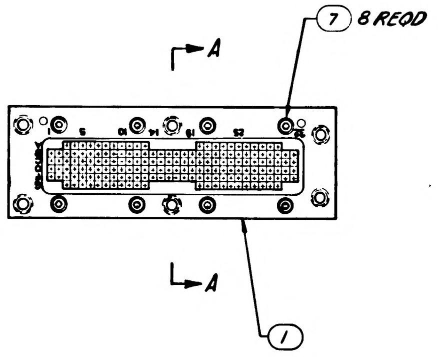
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES 267).
3. BOND ITEM (5) TO ITEM (4) USING ITEM (10) AND (11) PER ND 1002151
4. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
5. ITEM (8) TO BE SPLIT PER MS35489 AT INSTALLATION.







SECTION A-A



						ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				AR		11	MIL-A-25457	ADHESIVE SILICONE
				AR		10	1010718	PRIMER ADHESIVE
SEE NOTE 4				3		9	1006783-19	SCREW, BUTTON HEAD
				2		8	MS35489-17	GROMMET, RUBBER
SEE NOTE 4				8		7	1017418-11	SCREW, CAP, SOC HD
				4		6	2901022-004	SCREW, SHOULDER
				2		5	2900580-001	GASKET
				2		4	2900711-001	CLAMP, MOVABLE
				1		3	6900110	SHELL, ELECT CONN (INSEP ASSY)
				1		2	6900111	SHELL, ELECT CONN (INSEP ASSY)
				1		1	6900112	BASE, ELECT CONN (INSEP ASSY)
				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900091	6900077-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
Contract NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN R. W. Turner DATE 8 FEB 66
CHECKED 16 FEB 66
APPROVAL 16 FEB 66
APPROVAL L. Jellesman 5/3/66
NASA APPROVAL
MIT APPROVAL

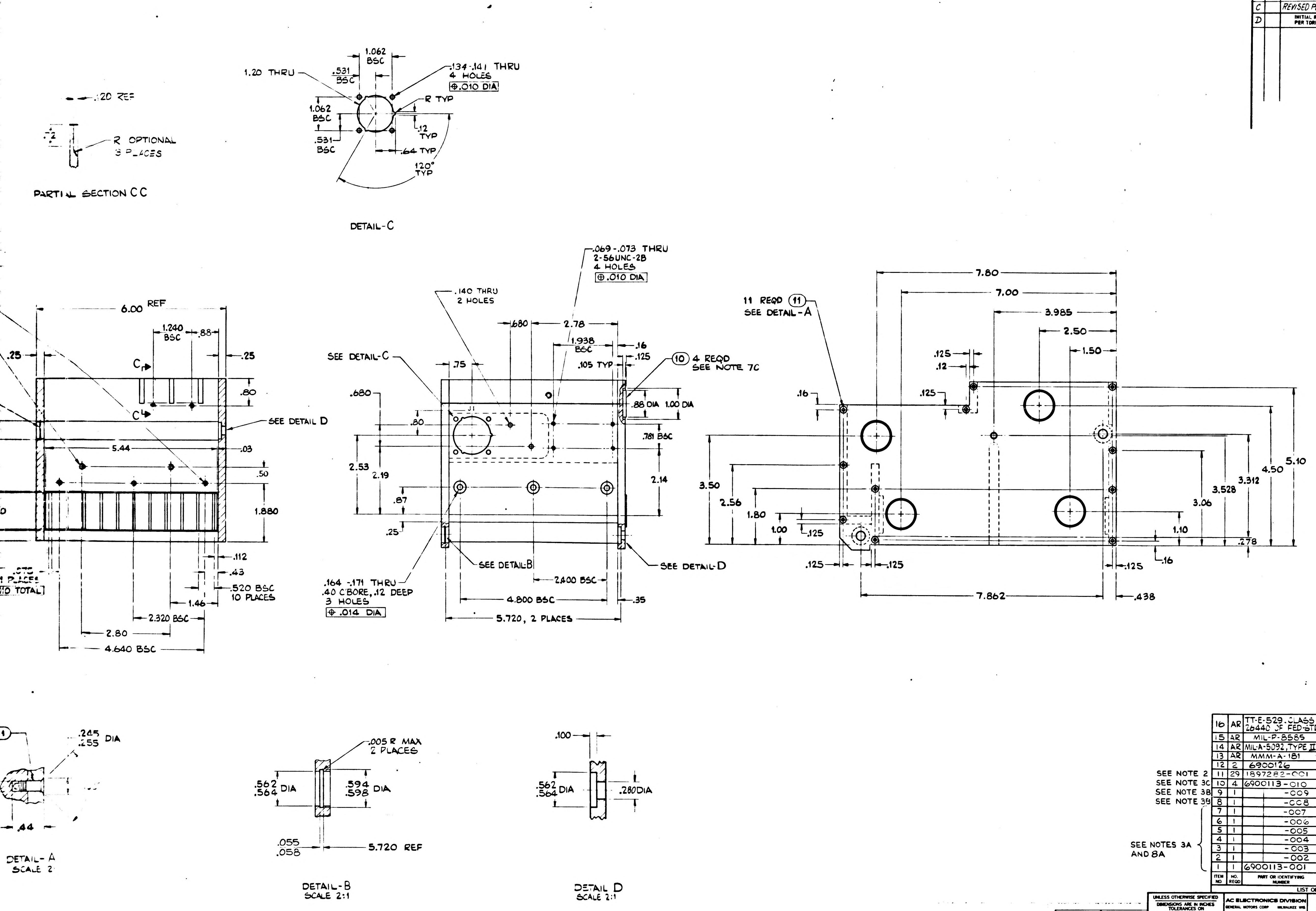
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

CONNECTOR, SOCKET,
ELECTRICAL - 172 PIN

CODE IDENT NO 99974
SIZE E
6900109
SCALE FULL
SHEET 1 OF 1

6 FEB 66

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER MXC 210533		[illegible]	[illegible]
B	D-11	REVISED PER MXC 210948		[illegible] 66	[illegible]
C		REVISED PER MXC 211307		8 APR	G.M.T.
D		INITIAL RELEASE CLASS A PER TDRR 28578		2 MAY 66	[illegible]



.120 REF
R OPTIONAL
3 PLACES
PARTIAL SECTION CC
1.20 THRU
.531 BSC
1.062 BSC
.134-.141 THRU
4 HOLES
⊕ .010 DIA
R TYP
1.062 BSC
.531 BSC
.12 TYP
.64 TYP
120° TYP
DETAIL-C
6.00 REF
1.240 BSC
.88
.25
.25
C
C
.80
SEE DETAIL D
5.44
.03
.50
1.880
.112
.43
.520 BSC
10 PLACES
1.46
2.320 BSC
2.80
4.640 BSC
.069-.073 THRU
2-56UNC-2B
4 HOLES
⊕ .010 DIA
.140 THRU
2 HOLES
SEE DETAIL-C
.680
2.78
1.938 BSC
.16
.125
.105 TYP
.75
⑩ 4 REQD
SEE NOTE 7C
.680
.80
.88 DIA
1.00 DIA
.781 BSC
2.53
2.19
2.14
.87
.25
SEE DETAIL-B
SEE DETAIL-D
.164-.171 THRU
.40 C'BORE, .12 DEEP
3 HOLES
⊕ .014 DIA
2.400 BSC
4.800 BSC
.35
5.720, 2 PLACES
7.80
7.00
3.985
2.50
1.50
11 REQD ⑪
SEE DETAIL-A
.125
.12
.125
.16
3.50
2.56
1.80
1.00
.125
3.06
3.528
3.312
4.50
5.10
1.10
.278
.16
.125
.125
.125
7.862
.438
.245
.255 DIA
.44
DETAIL-A
SCALE 2
.005 R MAX
2 PLACES
.562
.564 DIA
.594
.598 DIA
.055
.058
5.720 REF
DETAIL-B
SCALE 2:1
.100
.562
.564 DIA
.280 DIA
DETAIL D
SCALE 2:1

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	16	AR	TT-E-529, CLASS B, COLOR 26440 OF FED-STD-595	LIGHT GREY ENAMEL
	15	AR	MIL-P-8585	PRIMER (ES2589)
	14	AR	MIL-A-5092, TYPE II	ADHESIVE (ES2770-2)
	13	AR	MMM-A-181	ADHESIVE
	12	2	6900126	PIN STRAIGHT, HEADLESS
SEE NOTE 2	11	29	1897282-001	RIVET, BLIND-DRIVE PIN
SEE NOTE 3C	10	4	6900113-010	PAD
SEE NOTE 3B	9	1	-009	GUIDE, COMPONENTS BOARD
SEE NOTE 3B	8	1	-008	GUIDE, COMPONENTS BOARD
SEE NOTES 3A AND 8A	7	1	-007	BAR, DIVIDER
	6	1	-006	PLATE, INTERMEDIATE
	5	1	-005	DIVIDER
	4	1	-004	END, R.H.
	3	1	-003	END, L.H.
	2	1	-002	REAR
	1	1	6900113-001	PLATE, FRONT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6900088-011	6900088-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS.
DRAWN E. Miller DATE 8 FEB 66
CHECKED Ed Foster 15 MAR 66
APPROVAL [illegible]
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CASE, PSA ADAPTER MODULE
(INSEPARABLE ASSEMBLY)

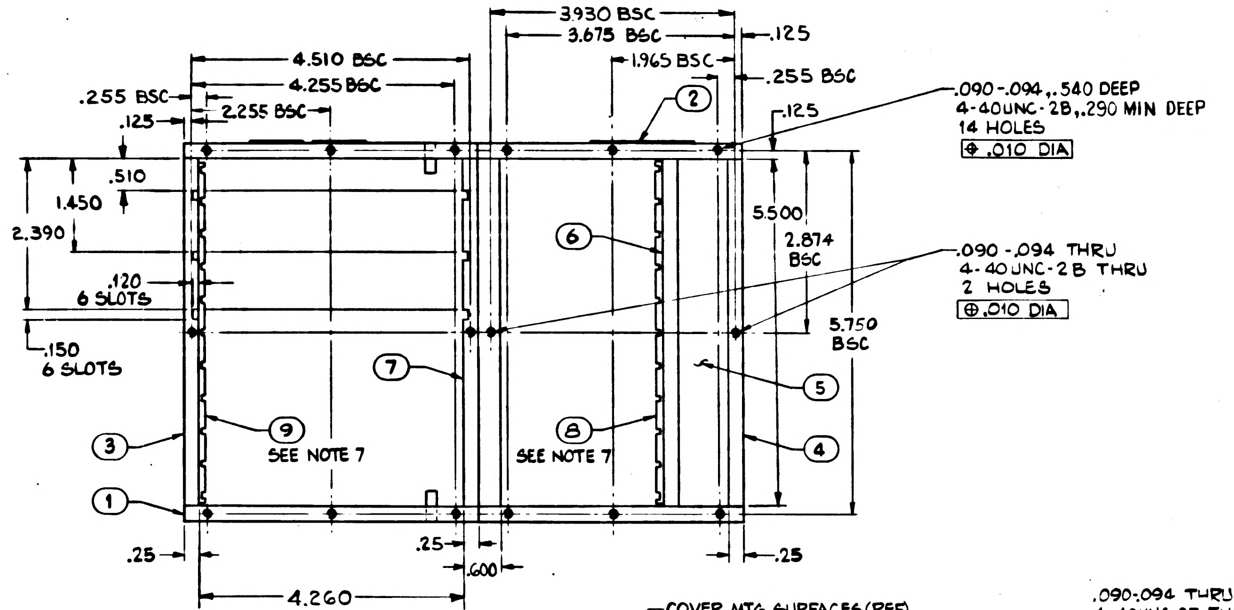
SIZE J2
CODE IDENT NO. 99974
6900113
SCALE FULL
SHEET 1 OF 1

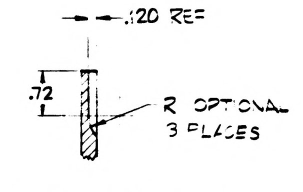
6900113 D

27/6900113

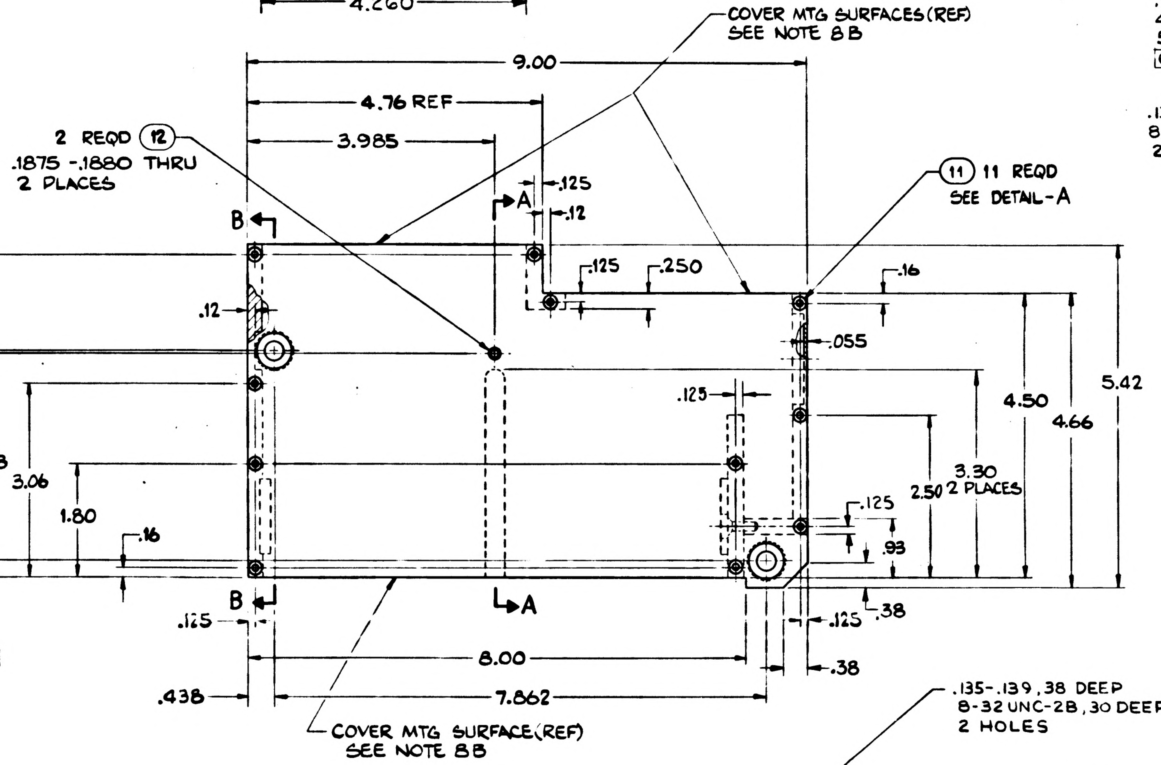
NOTES:

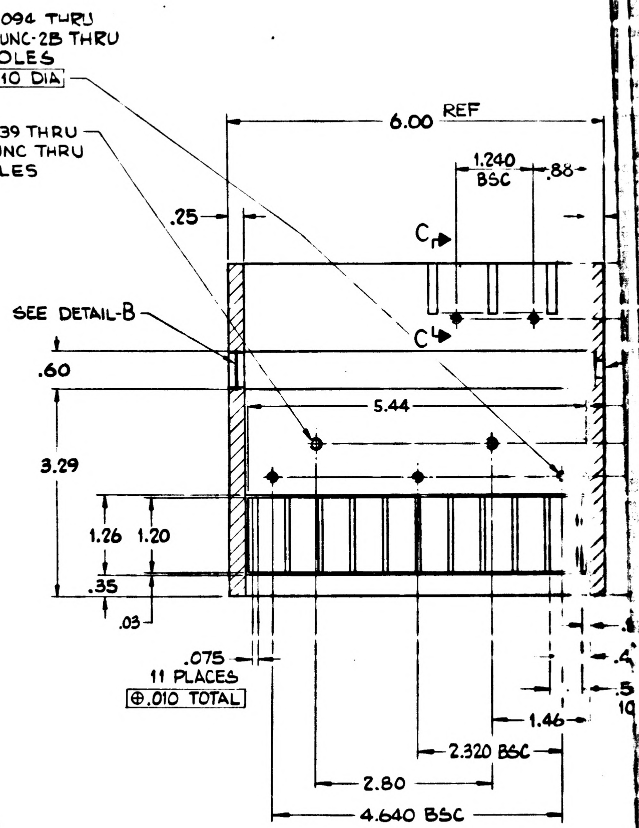
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
3. MATERIAL:
   - A. ALUMINUM ALLOY QQ-A-250/8 TEMPER F (ES2105 TYPE 5052).
   - B. NYLON PER MIL-P-17091 TYPE I (ES2727).
   - C. RUBBER PER MIL-R-6855, CLASS II, GRADE 40 (ES2710-1).
4. MARK CHARACTERS PER ND 1002019, .12 HIGH, COLOR BLACK. CENTRALIZE AS SHOWN.
5. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES267).
6. MUST BE FREE FROM BURRS AND SHARP EDGES.
7. BONDING:
   - A. DEGREASE ③ AND ⑥ AND APPLY .002 -.005 THICK FILM OF ADHESIVE PER ND 1002187, TYPE I. CURE AT 145° TO 155° F FOR 1.0 TO 1.5 HOURS.
   - B. DEGREASE NYLON AND APPLY FILM OF ③ TO ⑧ AND ⑨ PRESS ⑧ TO ⑥ AND ⑨ TO ③ AND REMOVE EXCESS ADHESIVE. CURE AT 145° TO 155° FOR 2 HOURS MIN.
   - C. BOND ⑩ TO ② USING ⑭.
8. FINISH:
   - A. MIL-C-5541 (ES591 CHEMICAL FILM) ALL OVER.
   - B. APPLY ⑮ AND 2 COATS OF ⑯ TO ALL OUTSIDE SURFACES EXCEPT COVER MOUNTING SURFACES.

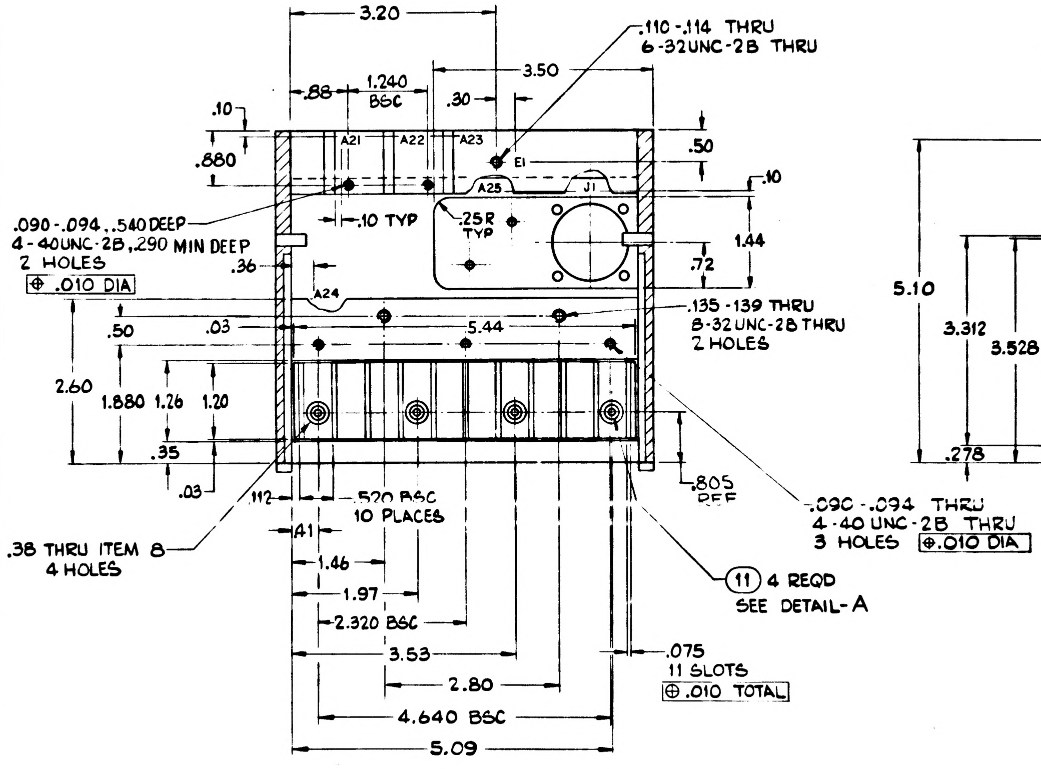

3.930 BSC
3.675 BSC
.125
4.510 BSC
4.255 BSC
1.965 BSC
.255 BSC
.255 BSC
.125
2.255 BSC
②
.125
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
14 HOLES
⊕ .010 DIA
.510
1.450
2.390
5.500
2.874 BSC
⑥
.090-.094 THRU
4-40UNC-2B THRU
2 HOLES
⊕ .010 DIA
.120
6 SLOTS
5.750 BSC
.150
6 SLOTS
⑦
⑤
③
⑨
SEE NOTE 7
⑧
SEE NOTE 7
④
①
.25
.25
.600
.25
4.260


.120 REF
.72
R OPTIONAL
3 PLACES

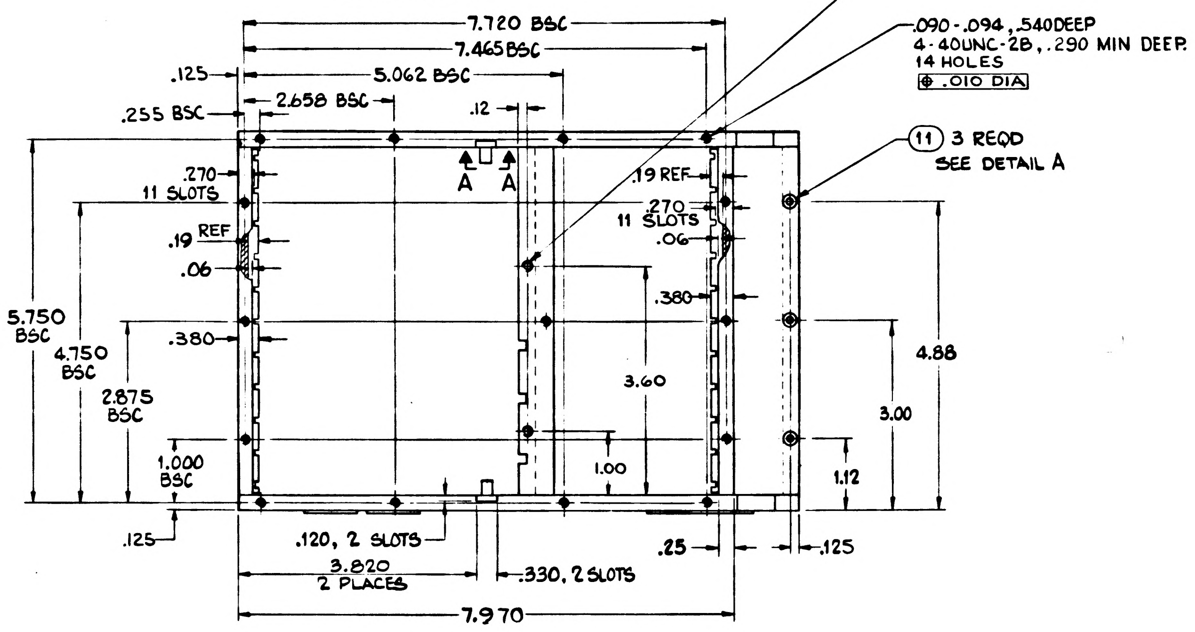
PARTIAL SECTION CC

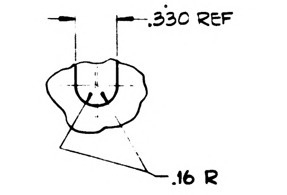

COVER MTG SURFACES (REF)
SEE NOTE 8B
9.00
4.76 REF
3.985
2 REQD ⑫
.1875 -.1880 THRU
2 PLACES
⑪ 11 REQD
SEE DETAIL-A
B
A
.125
.12
.125
.250
.16
.12
.055
5.10
3.312
3.528
3.06
1.80
.16
.278
.125
4.50
4.66
5.42
3.30
2 PLACES
2.50
.125
.93
B
A
.125
.125
.38
8.00
.38
.438
7.862
COVER MTG SURFACE (REF)
SEE NOTE 8B


.090-.094 THRU
4-40UNC-2B THRU
5 HOLES
⊕ .010 DIA
.135-.139 THRU
8-32UNC THRU
2 HOLES
6.00 REF
1.240 BSC
.88
.25
C
SEE DETAIL-B
C
.60
5.44
3.29
1.26
1.20
.35
.03
.075
11 PLACES
⊕ .010 TOTAL
1.46
2.320 BSC
2.80
4.640 BSC

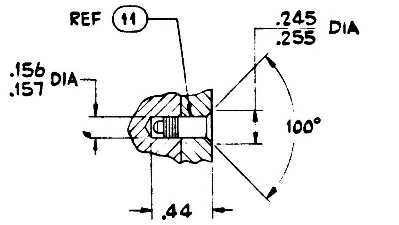

3.20
.110 -.114 THRU
6-32UNC-2B THRU
3.50
.88
1.240 BSC
.30
.10
.880
A21
A22
A23
E1
.50
A25
J1
.10
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
2 HOLES
⊕ .010 DIA
.10 TYP
.25R TYP
1.44
.36
.72
A24
.135 -.139 THRU
8-32UNC-2B THRU
2 HOLES
.50
.03
5.44
2.60
1.880
1.26
1.20
.35
.03
.805 REF
.112
.520 BSC
10 PLACES
.090 -.094 THRU
4-40 UNC-2B THRU
3 HOLES ⊕.010 DIA
.38 THRU ITEM 8
4 HOLES
.41
1.46
⑪ 4 REQD
SEE DETAIL-A
1.97
2.320 BSC
3.53
.075
11 SLOTS
⊕ .010 TOTAL
2.80
4.640 BSC
5.09

SECTION A-A


.135-.139, .38 DEEP
8-32 UNC-2B, .30 DEEP
2 HOLES
7.720 BSC
7.465 BSC
.090-.094, .540DEEP
4-40UNC-2B, .290 MIN DEEP
14 HOLES
⊕ .010 DIA
.125
5.062 BSC
.255 BSC
2.658 BSC
.12
⑪ 3 REQD
SEE DETAIL A
.270
11 SLOTS
A
A
.19 REF
.270
11 SLOTS
.19 REF
.06
.06
.380
5.750 BSC
4.750 BSC
.380
3.60
4.88
2.875 BSC
3.00
1.000 BSC
1.00
1.12
.125
.120, 2 SLOTS
.25
.125
3.820
2 PLACES
.330, 2 SLOTS
7.970



PARTIAL VIEW AA
SCALE 2:1
2 PLACES

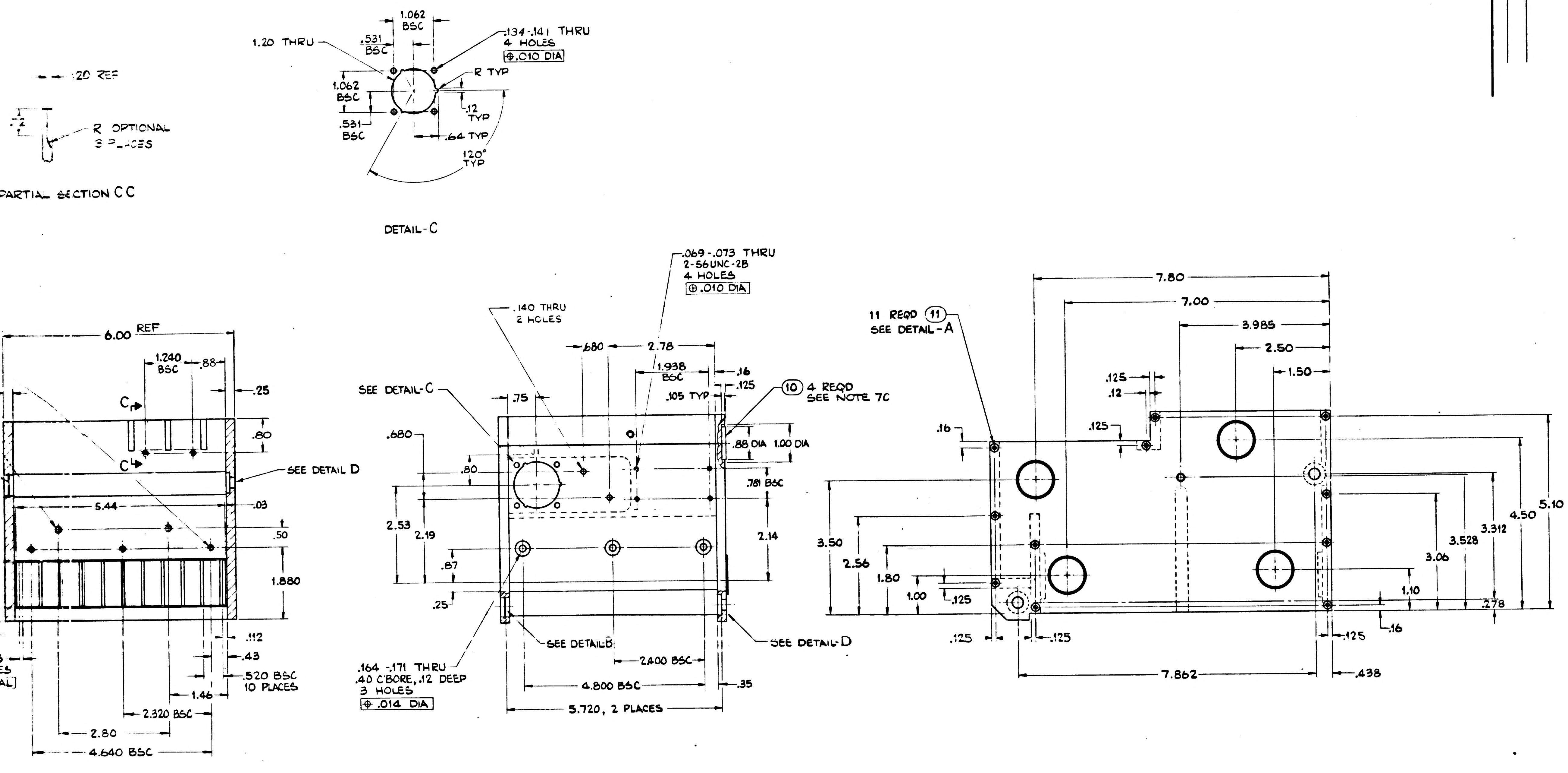

REF ⑪
.245
.255 DIA
.156
.157 DIA
100°
.44

DETAIL-A
SCALE 2:1

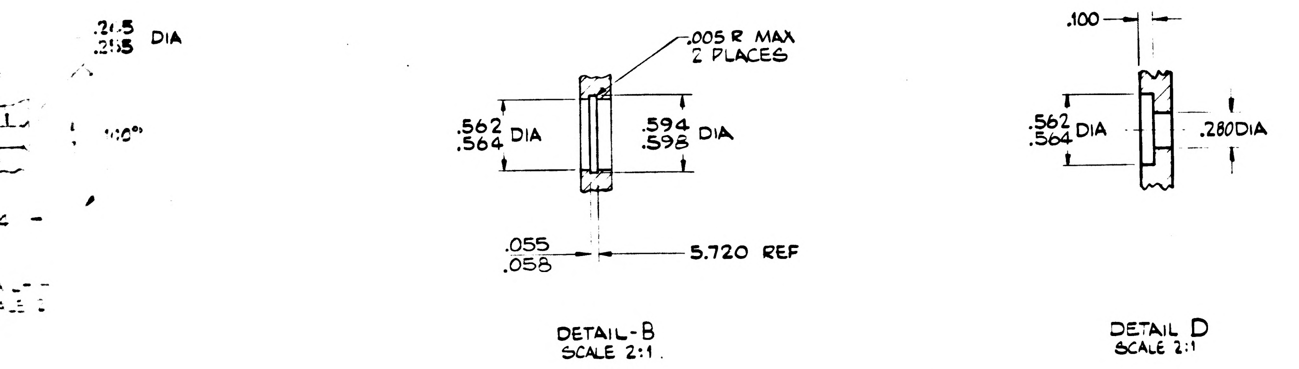
6900113 D

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER MXC 210333		66	
B	D-11	REVISED PER MXC 210948		APR 66	
C		REVISED PER MXC 211307		APR 66	G.M.T. E
D		INITIAL RELEASE CLASS A PER TDRR 28578		2 MAY 66	RP E
E		REVISED PER TDRR 29782		66	E.F.



.20 REF
R OPTIONAL 3 PLACES
PARTIAL SECTION CC
1.062 BSC
.531 BSC
1.20 THRU
.134-.141 THRU 4 HOLES
⊕ .010 DIA
R TYP
1.062 BSC
.531 BSC
.12 TYP
.64 TYP
120° TYP
DETAIL-C
6.00 REF
1.240 BSC
.88
.25
C
.80
SEE DETAIL D
5.44
.03
.50
1.880
.112
.43
.520 BSC 10 PLACES
1.46
2.320 BSC
2.80
4.640 BSC
.069-.073 THRU 2-56UNC-2B 4 HOLES
⊕ .010 DIA
.140 THRU 2 HOLES
SEE DETAIL-C
.680
2.78
1.938 BSC
.16
.125
.105 TYP
.75
(10) 4 REQD SEE NOTE 7C
.88 DIA
1.00 DIA
.781 BSC
.680
.80
2.53
2.19
2.14
.87
.25
SEE DETAIL B
SEE DETAIL D
2.400 BSC
.164-.171 THRU .40 C'BORE, .12 DEEP 3 HOLES
⊕ .014 DIA
4.800 BSC
.35
5.720, 2 PLACES
7.80
7.00
3.985
2.50
1.50
11 REQD (11) SEE DETAIL-A
.125
.12
.125
.16
3.50
2.56
1.80
1.00
.125
5.10
4.50
3.312
3.528
3.06
1.10
.278
.16
.125
.125
.125
7.862
.438



.265 .255 DIA
.005 R MAX 2 PLACES
.562 .564 DIA
.594 .598 DIA
.055 .058
5.720 REF
.100
.562 .564 DIA
.280 DIA

DETAIL-B
SCALE 2:1

DETAIL D
SCALE 2:1

	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	16	AR	TT-E-529, CLASS B, COLOR 26440 OF FED-STD-595	LIGHT GREY ENAMEL
	15	AR	MIL-P-8585	PRIMER (ES2589)
	14	AR	MIL-A-5092, TYPE II	ADHESIVE (ES2770-2)
	13	AR	MMM-A-181	ADHESIVE
	12	2	6900126	PIN STRAIGHT, HEADLESS
SEE NOTE 2	11	29	1897282-001	RIVET, BLIND-DRIVE PIN
SEE NOTE 3C	10	4	6900113-010	PAD
SEE NOTE 3B	9	1	-009	GUIDE, COMPONENTS BOARD
SEE NOTE 3B	8	1	-008	GUIDE, COMPONENTS BOARD
SEE NOTES 3A AND 8A	7	1	-007	BAR, DIVIDER
	6	1	-006	PLATE, INTERMEDIATE
	5	1	-005	DIVIDER
	4	1	-004	END, R.H.
	3	1	-003	END, L.H.
	2	1	-002	REAR
	1	1	6900113-001	PLATE, FRONT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
6900088-011	6900088-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02
3 PLACE DECIMALS ±.005
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS.
DRAWN E. Miller DATE 8 FEB 66
CHECKED Ed Foster 15 MAR 66
APPROVAL
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CASE, PSA ADAPTER MODULE
(INSEPARABLE ASSEMBLY)

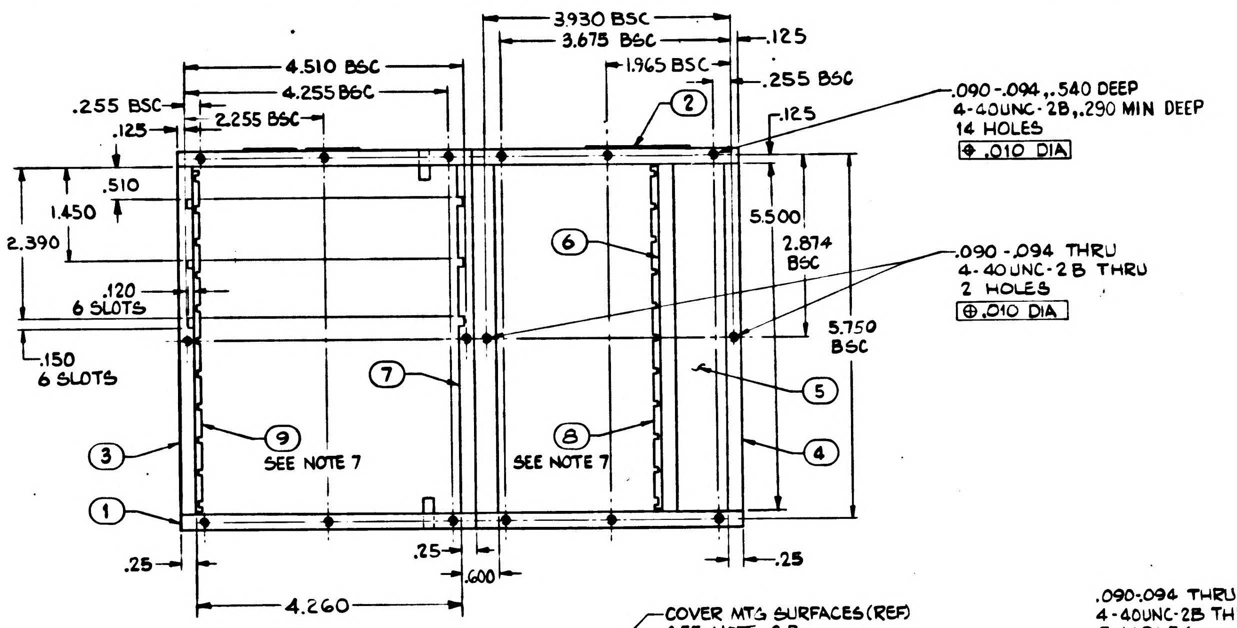
SIZE J2 | CODE IDENT NO. 99974 | 6900113
SCALE FULL | SHEET 1 OF 1

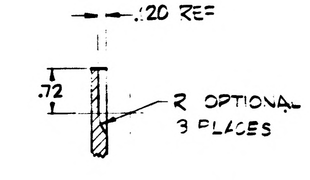
00113

2/6900113

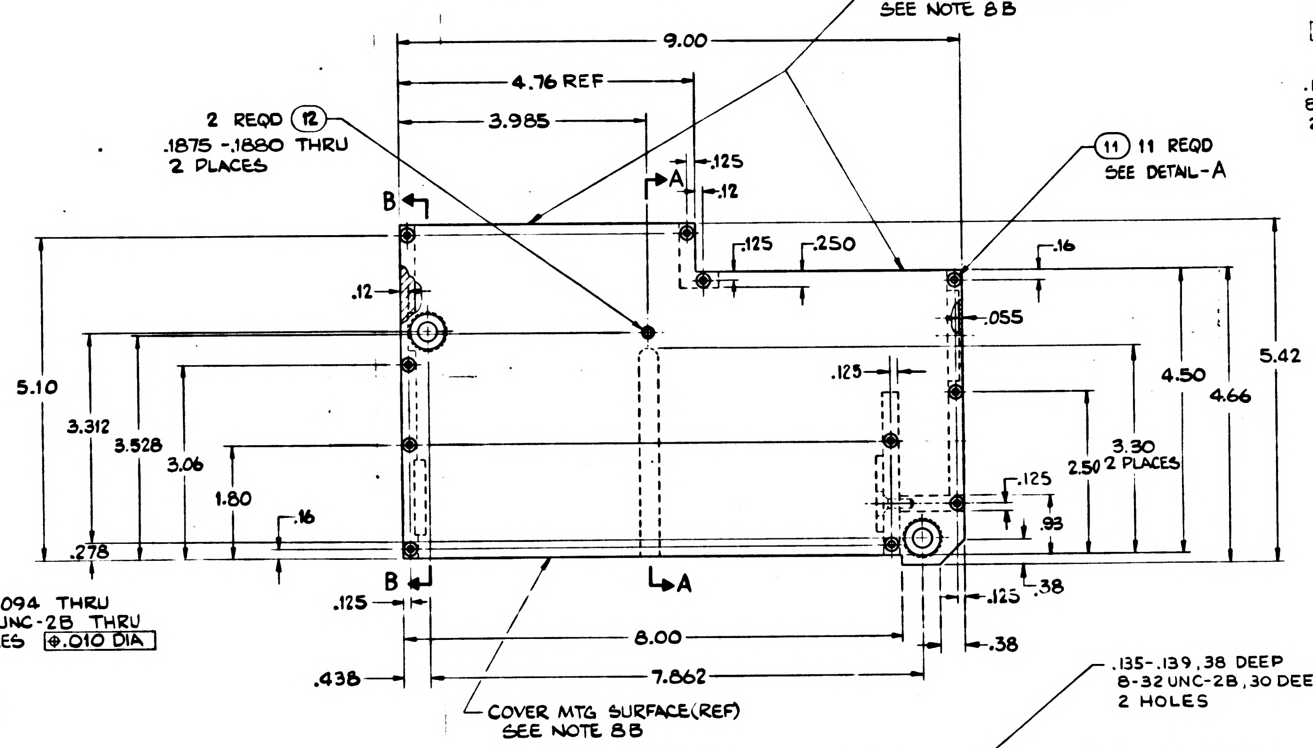
NOTES:

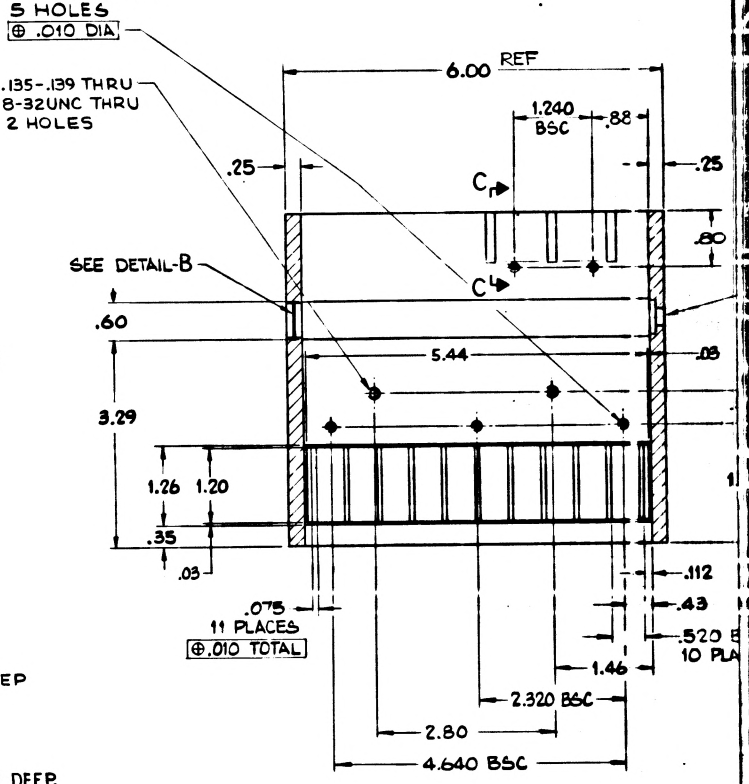
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
3. MATERIAL:
   - A. ALUMINUM ALLOY QQ-A-250/8 TEMPER F (ES2105 TYPE 5052).
   - B. NYLON PER MIL-P-17091 TYPE I (ES2727).
   - C. RUBBER PER MIL-R-6855, CLASS II, GRADE 40 (ES2710-1).
4. MARK CHARACTERS PER ND1002019, .12 HIGH, COLOR BLACK. CENTRALIZE AS SHOWN.
5. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES267).
6. MUST BE FREE FROM BURRS AND SHARP EDGES.
7. BONDING:
   - A. DEGREASE ③ AND ⑥ AND APPLY .002-.005 THICK FILM OF ADHESIVE PER ND1002187, TYPE I. CURE AT 145° TO 155° F FOR 1.0 TO 1.5 HOURS.
   - B. DEGREASE NYLON AND APPLY FILM OF ⑬ TO ⑧ AND ⑨ PRESS ⑧ TO ⑥ AND ⑨ TO ③ AND REMOVE EXCESS ADHESIVE. CURE AT 145° TO 155° FOR 2 HOURS MIN.
   - C. BOND ⑩ TO ② USING ⑭.
8. FINISH:
   - A. MIL-C-5541 (ES591 CHEMICAL FILM) ALL OVER.
   - B. APPLY ⑮ AND 2 COATS OF ⑯ TO ALL OUTSIDE SURFACES EXCEPT COVER MOUNTING SURFACES.

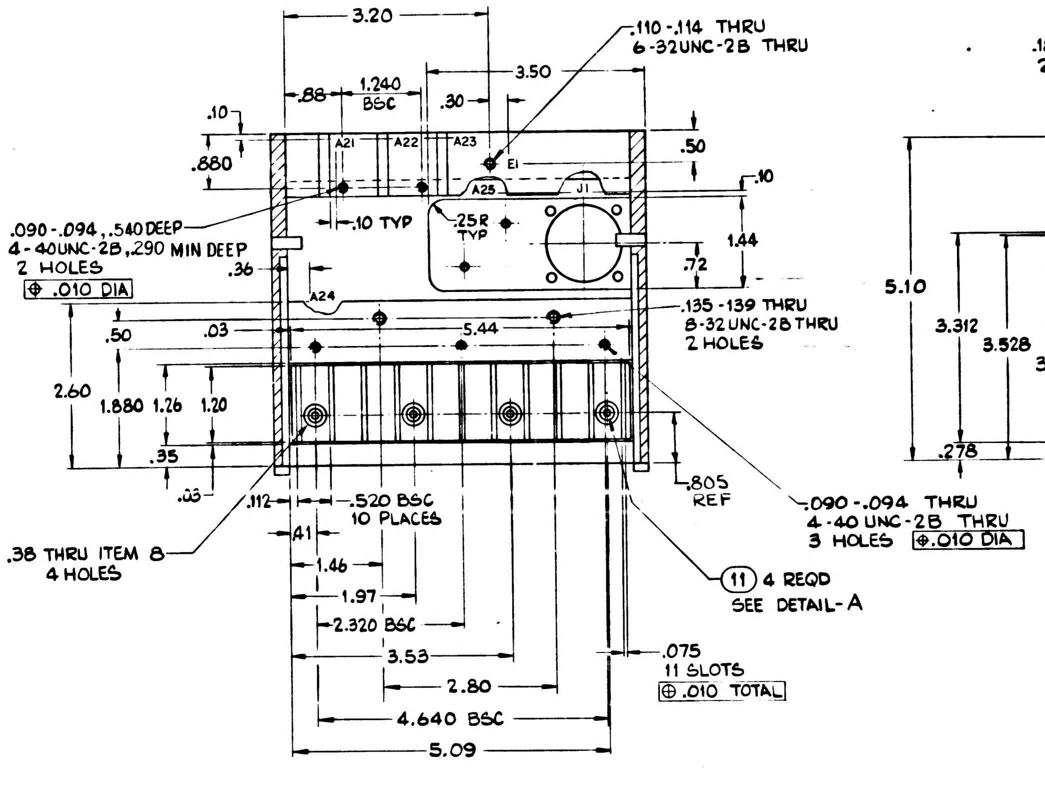

3.930 BSC
3.675 BSC
1.965 BSC
.125
.255 BSC
4.510 BSC
4.255 BSC
2.255 BSC
.255 BSC
.125
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
14 HOLES
⊕ .010 DIA
.510
1.450
2.390
.120
6 SLOTS
.150
6 SLOTS
5.500
2.874 BSC
5.750 BSC
.090-.094 THRU
4-40UNC-2B THRU
2 HOLES
⊕ .010 DIA
SEE NOTE 7
.25
.600
4.260
.25
1
2
3
4
5
6
7
8
9


.20 REF
.72
R OPTIONAL
3 PLACES

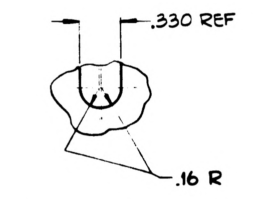
PARTIAL SECTION CC


COVER MTG SURFACES (REF)
SEE NOTE 8B
9.00
4.76 REF
3.985
2 REQD 12
.1875-.1880 THRU
2 PLACES
11 11 REQD
SEE DETAIL-A
B
A
.125
.12
.125
.250
.16
.055
.125
5.10
3.312
3.528
3.06
1.80
.16
.278
4.50
4.66
5.42
3.30
2 PLACES
2.50
.125
.93
.38
.125
.38
8.00
7.862
.438
COVER MTG SURFACE (REF)
SEE NOTE 8B
.135-.139, .38 DEEP
8-32 UNC-2B, .30 DEEP
2 HOLES

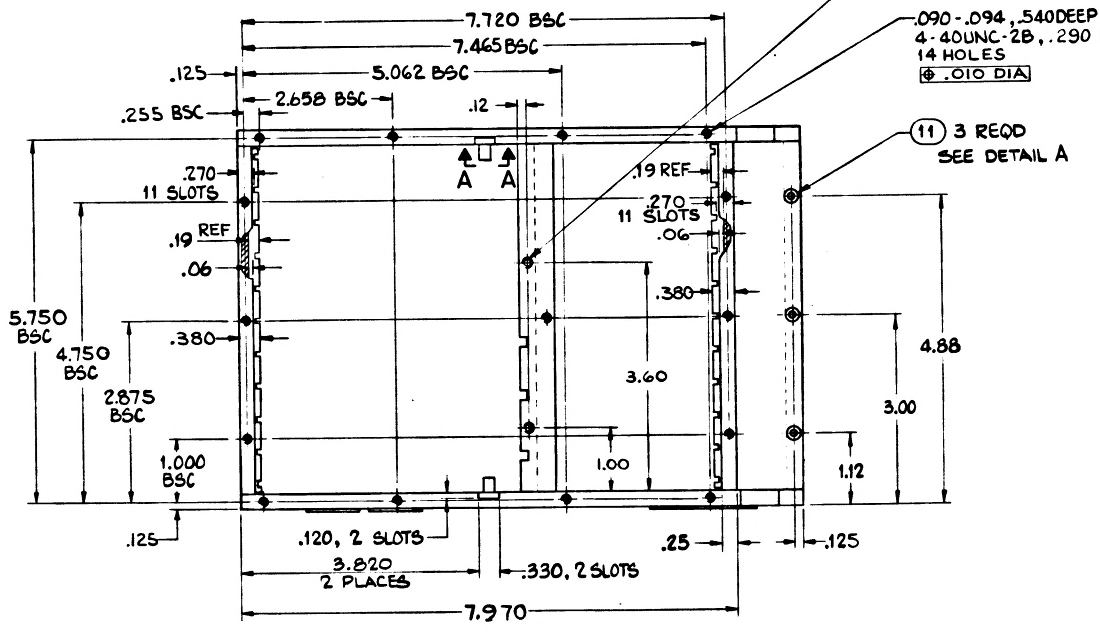

.090-.094 THRU
4-40UNC-2B THRU
5 HOLES
⊕ .010 DIA
.135-.139 THRU
8-32UNC THRU
2 HOLES
6.00 REF
1.240 BSC
.88
.25
.25
C
SEE DETAIL-B
.80
.60
5.44
.08
3.29
1.26
1.20
.35
.03
.075
11 PLACES
⊕ .010 TOTAL
.112
.43
.520 B
10 PLA
1.46
2.320 BSC
2.80
4.640 BSC

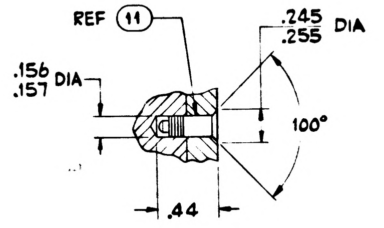

3.20
3.50
.88
1.240 BSC
.30
.110-.114 THRU
6-32UNC-2B THRU
.10
.880
A21
A22
A23
E1
A25
J1
.50
.10
.25R TYP
.10 TYP
1.44
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
2 HOLES
⊕ .010 DIA
.36
.72
A24
.135-.139 THRU
8-32UNC-2B THRU
2 HOLES
.50
.03
5.44
2.60
1.880
1.26
1.20
.35
.03
.112
.520 BSC
10 PLACES
.805 REF
.090-.094 THRU
4-40 UNC-2B THRU
3 HOLES
⊕ .010 DIA
.38 THRU ITEM 8
4 HOLES
.41
1.46
1.97
2.320 BSC
3.53
2.80
4.640 BSC
5.09
11 4 REQD
SEE DETAIL-A
.075
11 SLOTS
⊕ .010 TOTAL

SECTION A-A



PARTIAL VIEW AA
SCALE 2:1
2 PLACES


7.720 BSC
7.465 BSC
5.062 BSC
2.658 BSC
.125
.255 BSC
.12
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
14 HOLES
⊕ .010 DIA
11 3 REQD
SEE DETAIL A
A
A
.270
11 SLOTS
.19 REF
.06
.19 REF
.270
11 SLOTS
.06
.380
.380
5.750 BSC
4.750 BSC
2.875 BSC
1.000 BSC
3.60
1.00
4.88
3.00
1.12
.125
.120, 2 SLOTS
3.820
2 PLACES
.330, 2 SLOTS
.25
.125
7.970

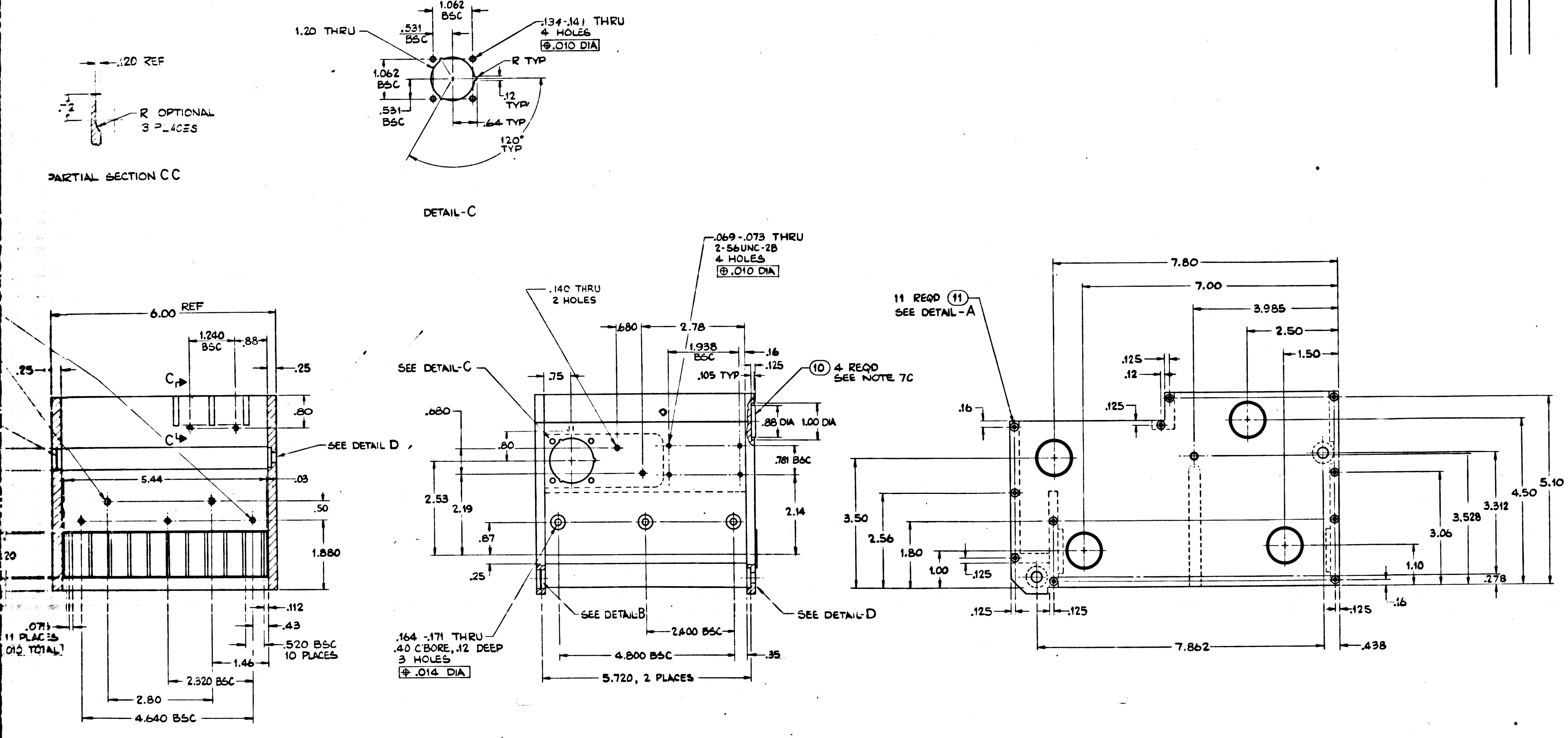

REF 11
.245
.255 DIA
.156
.157 DIA
100°
.44

DETAIL-A
SCALE 2:1

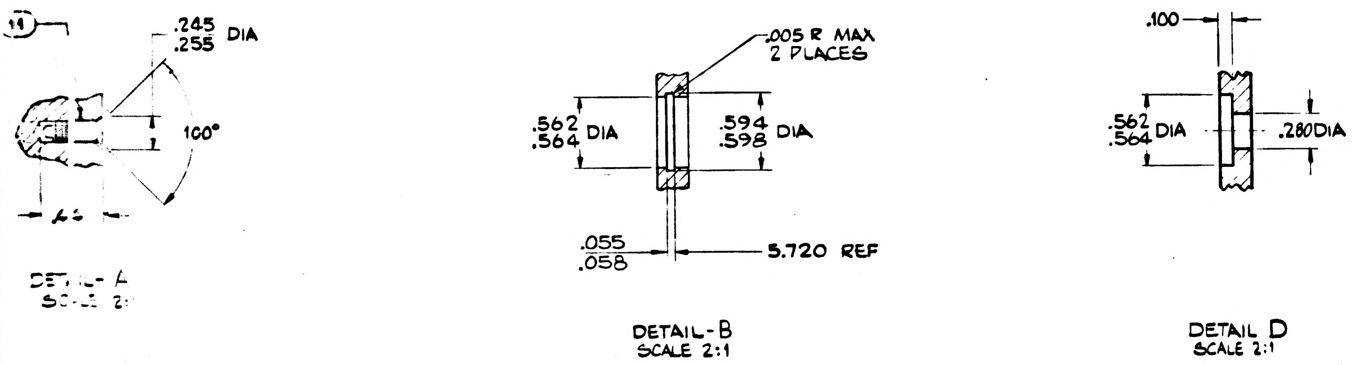
6900113

1/6900113

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER MXC 210883		7 APR 66	
B	D11	REVISED PER MXC 210948		66	
C		REVISED PER MXC 211307		18 APR 66	
D		INITIAL RELEASE CLASS A PER TDRR 28598		2 MAY 66	
E		REVISED PER TDRR 29782		27 66	
F		REVISED PER TDRR 30285		66	JAC



.120 REF
.2
R OPTIONAL
3 PLACES
PARTIAL SECTION CC
1.062
BSC
1.20 THRU
.531
BSC
.134-.141 THRU
4 HOLES
⊕ .010 DIA
1.062
BSC
R TYP
.12
TYP
.531
BSC
.64 TYP
120°
TYP
DETAIL-C
6.00 REF
1.240
BSC
.88
.25
.25
C
.80
C
SEE DETAIL D
5.44
.03
.50
1.880
20
.07
11 PLACES
.012 TOTAL
.112
.43
.520 BSC
10 PLACES
1.46
2.520 BSC
2.80
4.640 BSC
.069-.073 THRU
2-56UNC-2B
4 HOLES
⊕ .010 DIA
.140 THRU
2 HOLES
.680
2.78
1.938
BSC
.16
.125
.105 TYP
SEE DETAIL-C
.75
⑩ 4 REQD
SEE NOTE 7C
.680
.80
.88 DIA
1.00 DIA
J1
.781 BSC
2.53
2.19
2.14
.87
.25
SEE DETAIL-B
SEE DETAIL-D
.164-.171 THRU
.40 C'BORE, .12 DEEP
3 HOLES
⊕ .014 DIA
2.400 BSC
4.800 BSC
.35
5.720, 2 PLACES
7.80
7.00
11 REQD ⑪
SEE DETAIL-A
3.985
2.50
.125
.12
1.50
.16
.125
3.50
2.56
1.80
1.00
.125
5.10
4.50
3.312
3.528
3.06
1.10
.278
.125
.125
.125
.16
7.862
.438



⑪
.245
.255 DIA
100°
DETAIL-A
SCALE 2:1
.005 R MAX
2 PLACES
.562
.564 DIA
.594
.598 DIA
.055
.058
5.720 REF
DETAIL-B
SCALE 2:1
.100
.562
.564 DIA
.280 DIA
DETAIL D
SCALE 2:1

	16	AR	TT-E-529, CLASS B, COLOR 26440 OF FED-STD-595	LIGHT GREY ENAMEL	
	15	AR	MIL-P-8585	PRIMER (ES2589)	
	14	AR	MIL-A-5092, TYPE II	ADHESIVE (ES2770-2)	
	13	AR	MMM-A-181	ADHESIVE	
	12	2	6900126	PIN STRAIGHT, HEADLESS	
SEE NOTE 2	11	29	1897282-001	RIVET, BLIND-DRIVE PIN	
SEE NOTE 3C	10	4	6900113-010	PAD	
SEE NOTE 3B	9	1	-009	GUIDE, COMPONENTS BOARD	
SEE NOTE 3B	8	1	-008	GUIDE, COMPONENTS BOARD	
SEE NOTES 3A AND 8A	7	1	-007	BAR, DIVIDER	
	6	1	-006	PLATE, INTERMEDIATE	
	5	1	-005		DIVIDER
	4	1	-004		END, R.H.
	3	1	-003		END, L.H.
	2	1	-002		REAR
	1	1	6900113-001	PLATE, FRONT	
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	

LIST OF PARTS AND MATERIALS

6900088-011	6900088-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02
3 PLACE DECIMALS ±.005
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Miller DATE 18 FEB 66
CHECKED Ed Foster 15 MAR 66
APPROVAL 5/4/66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CASE, PSA ADAPTER MODULE
(INSEPARABLE ASSEMBLY)

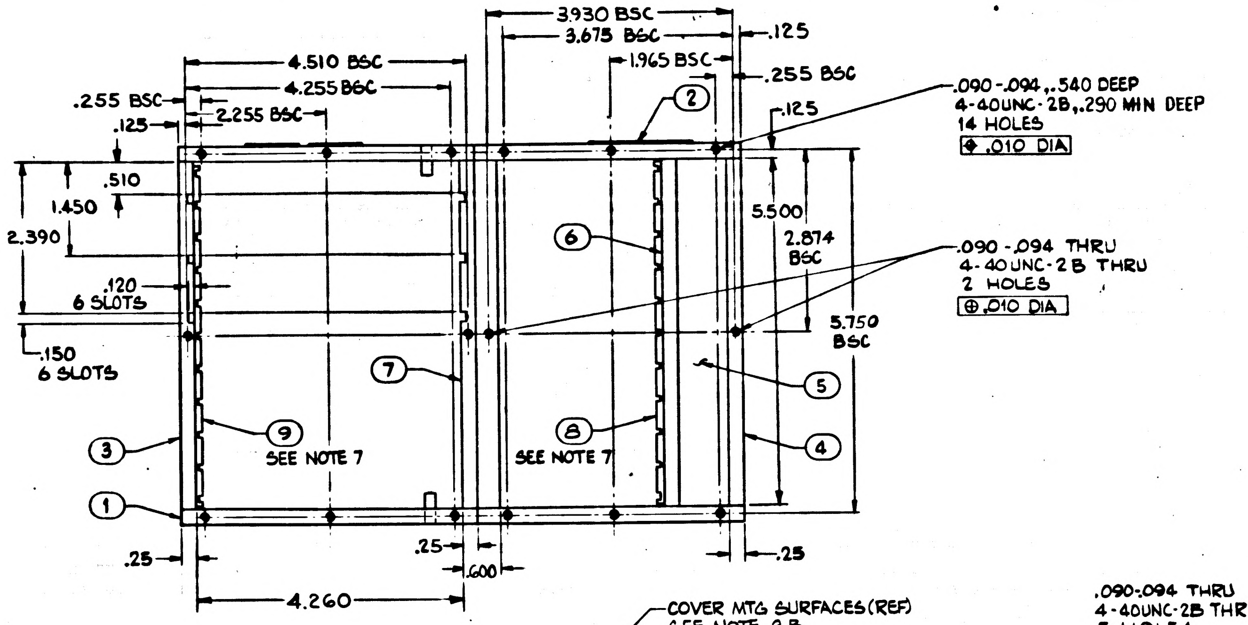
SIZE J2
CODE IDENT NO. 99974
6900113
SCALE FULL
SHEET 1 OF 1

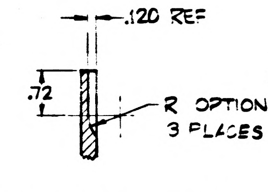
6900113

2-6900113

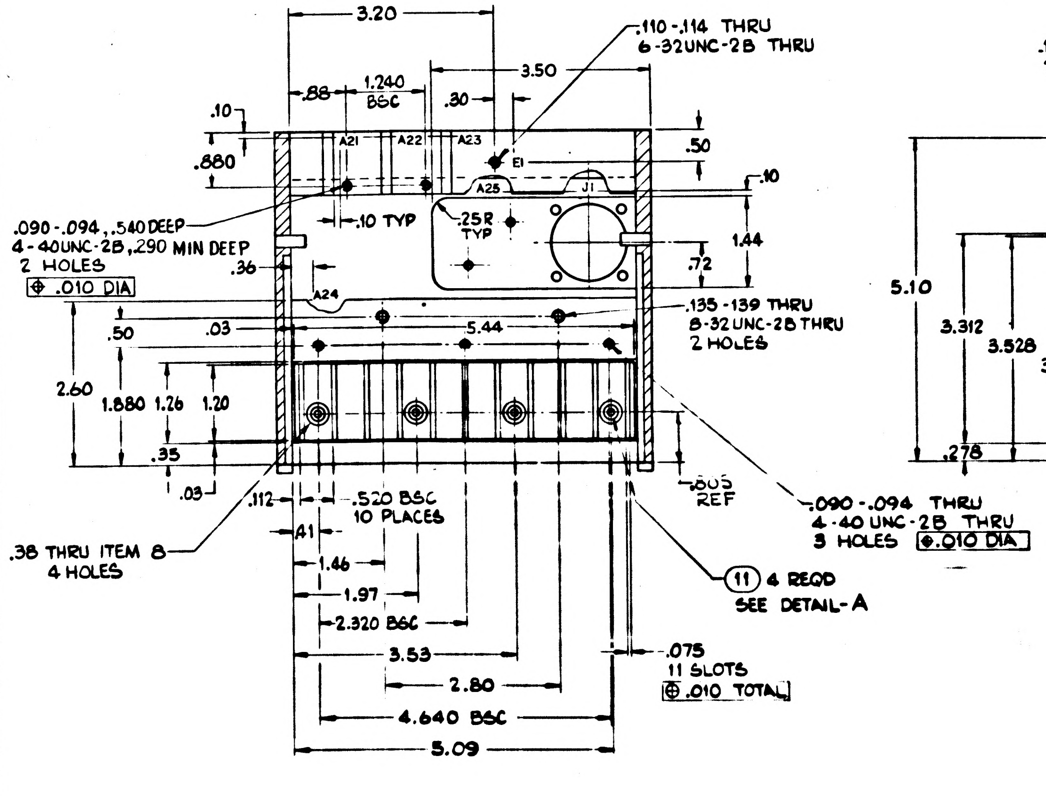
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
3. MATERIAL:
   - A. ALUMINUM ALLOY QQ-A-250/8 TEMPER F (ES2105 TYPE 5052).
   - B. NYLON PER MIL-P-17091 TYPE I (ES2727).
   - C. RUBBER PER MIL-R-6855, CLASS II, GRADE 40 (ES2710-1).
4. MARK CHARACTERS PER ND1002019, .12 HIGH, COLOR BLACK. CENTRALIZE AS SHOWN.
5. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES267).
6. MUST BE FREE FROM BURRS AND SHARP EDGES.
7. BONDING:
   - A. DEGREASE ③ AND ⑥ AND APPLY .002 -.005 THICK FILM OF ADHESIVE PER ND1002187, TYPE I. CURE AT 145° TO 155° F FOR 1.0 TO 1.5 HOURS.
   - B. DEGREASE NYLON AND APPLY FILM OF ⑬ TO ⑧ AND ⑨ PRESS ⑧ TO ⑥ AND ⑨ TO ③ AND REMOVE EXCESS ADHESIVE. CURE AT 145° TO 155° FOR 2 HOURS MIN.
   - C. BOND ⑩ TO ② USING ⑭.
8. FINISH:
   - A. MIL-C-5541 (ES591 CHEMICAL FILM) ALL OVER.
   - B. APPLY ⑮ AND 2 COATS OF ⑯ TO ALL OUTSIDE SURFACES EXCEPT COVER MOUNTING SURFACES.

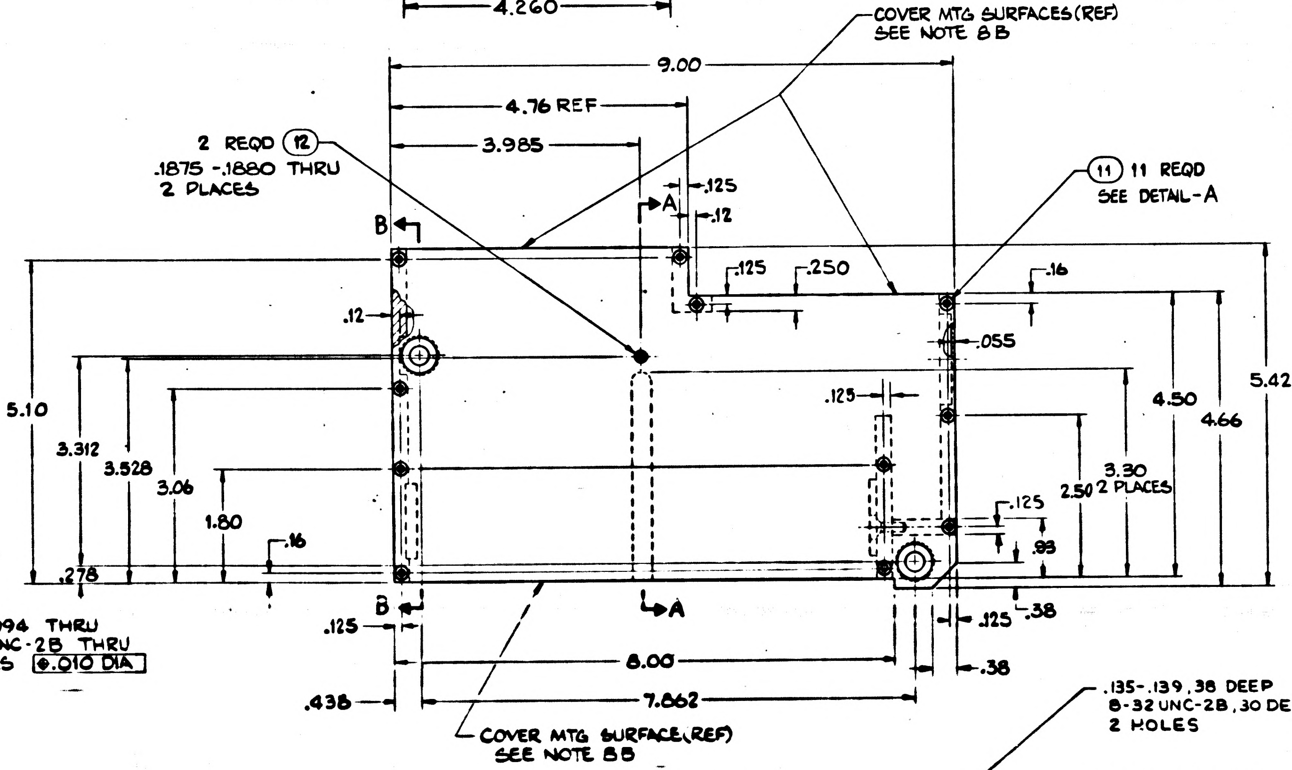

3.930 BSC
3.675 BSC
1.965 BSC
.125
.255 BSC
4.510 BSC
4.255 BSC
2.255 BSC
.255 BSC
.125
.510
1.450
2.390
.120
6 SLOTS
.150
6 SLOTS
5.500
2.874 BSC
5.750 BSC
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
14 HOLES
⊕ .010 DIA
.090-.094 THRU
4-40UNC-2B THRU
2 HOLES
⊕ .010 DIA
②
⑥
⑦
⑤
③
⑨
SEE NOTE 7
⑧
SEE NOTE 7
④
①
.25
.25
.600
.25
4.260

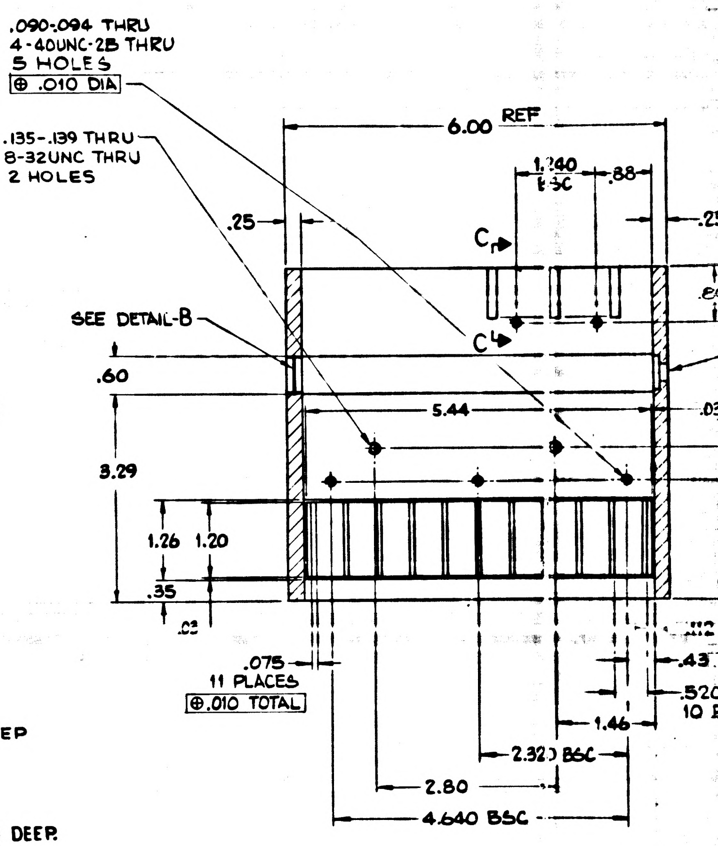

.120 REF
.72
R OPTIONAL
3 PLACES

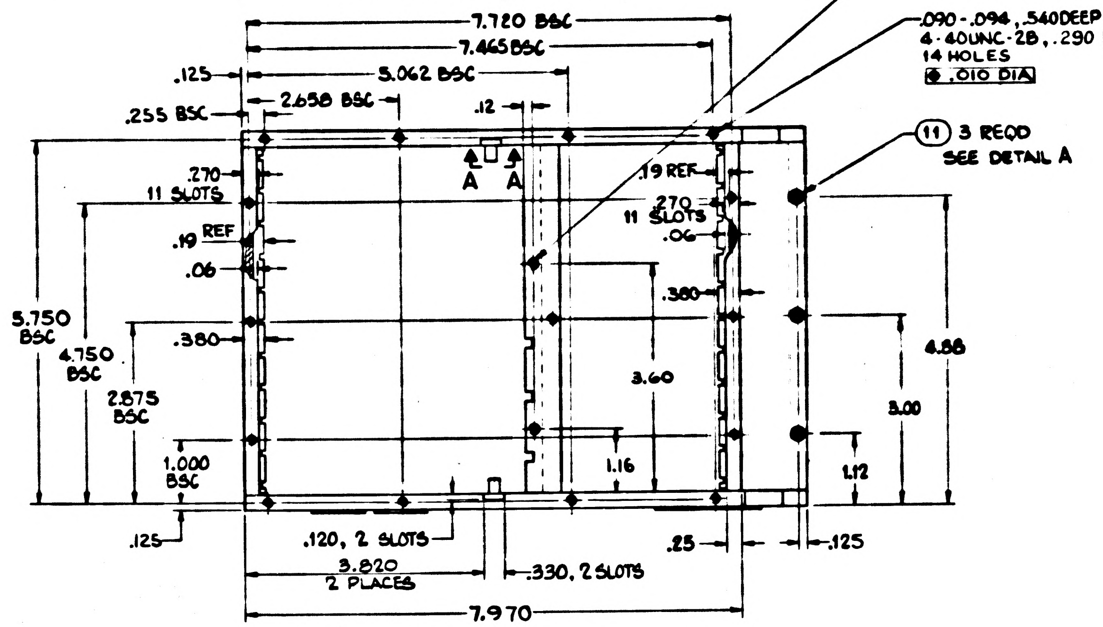
PARTIAL SECTION CC

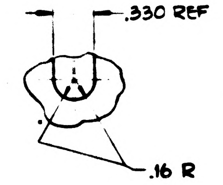

3.20
.110-.114 THRU
6-32UNC-2B THRU
.88
1.240 BSC
.30
3.50
.10
.880
A21
A22
A23
E1
A25
J1
.50
.10
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
2 HOLES
⊕ .010 DIA
.10 TYP
.25R TYP
1.44
.36
.72
A24
.135-.139 THRU
8-32UNC-2B THRU
2 HOLES
.50
.03
5.44
2.60
1.880
1.26
1.20
.35
.03
.112
.520 BSC
10 PLACES
.505 REF
.090-.094 THRU
4-40 UNC-2B THRU
3 HOLES ⊕ .010 DIA
.38 THRU ITEM 8
4 HOLES
.41
1.46
1.97
2.320 BSC
3.53
2.80
4.640 BSC
5.09
⑪ 4 REQD
SEE DETAIL-A
.075
11 SLOTS
⊕ .010 TOTAL

SECTION A-A

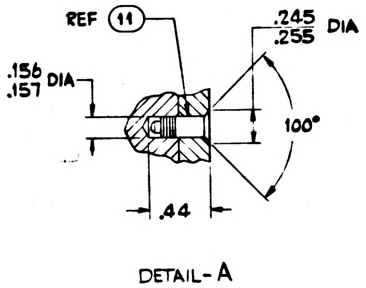

COVER MTG SURFACES (REF)
SEE NOTE 8B
9.00
4.76 REF
3.985
2 REQD ⑫
.1875-.1880 THRU
2 PLACES
⑪ 11 REQD
SEE DETAIL-A
B
A
.125
.12
.125
.250
.16
.12
.055
5.10
3.312
3.528
3.06
1.80
.16
.278
.125
4.50
4.66
5.42
3.30
2 PLACES
2.50
.125
.83
B
A
.125
.38
8.00
.38
.438
7.862
COVER MTG SURFACE (REF)
SEE NOTE 8B


.090-.094 THRU
4-40UNC-2B THRU
5 HOLES
⊕ .010 DIA
.135-.139 THRU
8-32UNC THRU
2 HOLES
6.00 REF
.25
1.240 BSC
.88
C
C
SEE DETAIL-B
.60
5.44
3.29
1.26
1.20
.35
.03
.075
11 PLACES
⊕ .010 TOTAL
1.46
2.320 BSC
2.80
4.640 BSC


.135-.139, .38 DEEP
8-32UNC-2B, .30 DEEP
2 HOLES
.090-.094, .540 DEEP
4-40UNC-2B, .290 MIN DEEP
14 HOLES
⊕ .010 DIA
7.720 BSC
7.465 BSC
.125
5.062 BSC
.255 BSC
2.658 BSC
.12
A
A
⑪ 3 REQD
SEE DETAIL A
.270
11 SLOTS
.19 REF
.19 REF
.270
11 SLOTS
.06
.06
.380
.380
5.750 BSC
4.750 BSC
2.875 BSC
1.000 BSC
3.60
4.88
3.00
1.16
1.12
.125
.120, 2 SLOTS
5.820
2 PLACES
.330, 2 SLOTS
.25
.125
7.970



PARTIAL VIEW AA
SCALE 2:1
2 PLACES


REF ⑪
.245
.255 DIA
.156
.157 DIA
100°
.44

DETAIL-A
SCALE 2:1

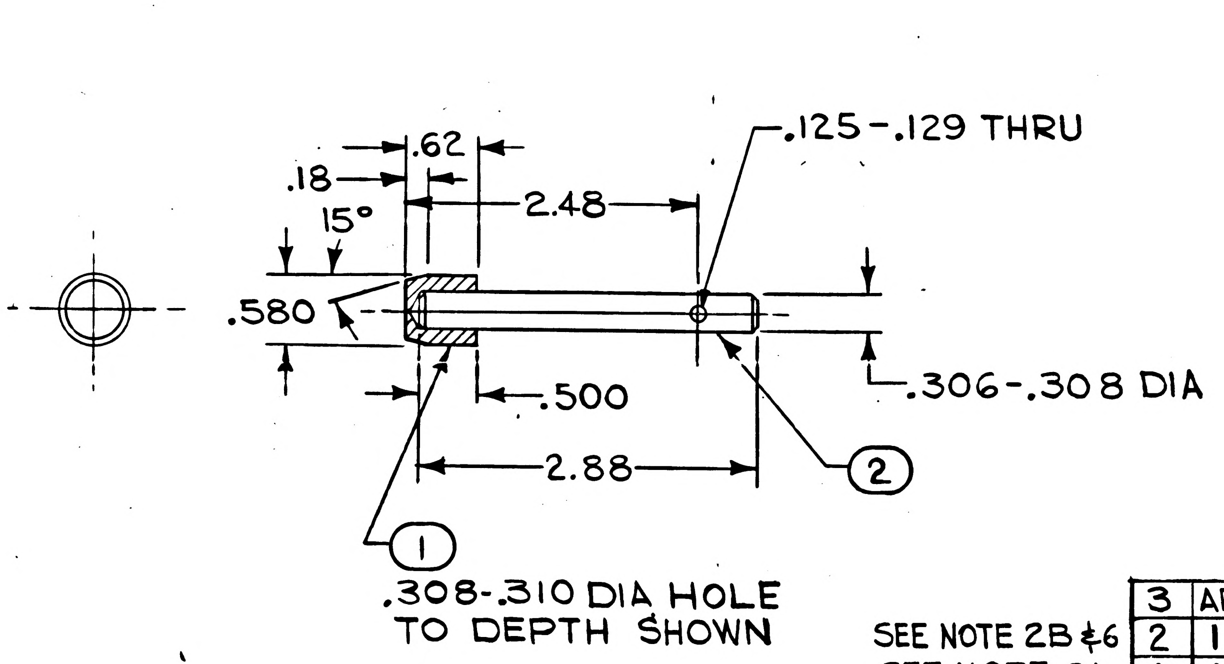
6900113

1/6900113

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   - A. NYLON PER MIL-P-17091, TYPE I (ES2727 TYPE I).
   - B. STAINLESS STEEL PER QQ-S-763, CLASS 303 COND A, CF (ES 380)
3. MUST BE FREE FROM BURRS AND SHARP EDGES.
4. IDENTIFY USING DRAWING NUMBER PER MIL-STD-130 (ES267).
5. DEGREASE ① AND APPLY FILM OF ③ TO AREAS TO BE BONDED. PRESS TOGETHER AND REMOVE EXCESS ADHESIVE. CURE AT 145°F TO 155°F FOR 2 HRS MIN.
6. FINISH:
   PASSIVATE PER MIL-F-14072 (SIG C) FIN E-300 (ES585).

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		INITIAL RELEASE CLASS A PER TDRR 28598		2 MAY 66	



	3	AR	MMM-A-181	ADHESIVE	
SEE NOTE 2B & 6	2	1	6900122-002	PIN	
SEE NOTE 2A	1	1	6900122-001	BUSHING	
	ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	
LIST OF PARTS AND MATERIALS					

690088-011	6900088-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+ 2°
-	±.02	-

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN M. Gulnis DATE 17-FEB 66
CHECKED Ed Foster 14 MAR 66
APPROVAL G. STODDARD 16 MAR 66
APPROVAL Gedman 5/4/66
NASA APPROVAL
GMcSweeney 5/4/66
MIT APPROVAL 5/9 66

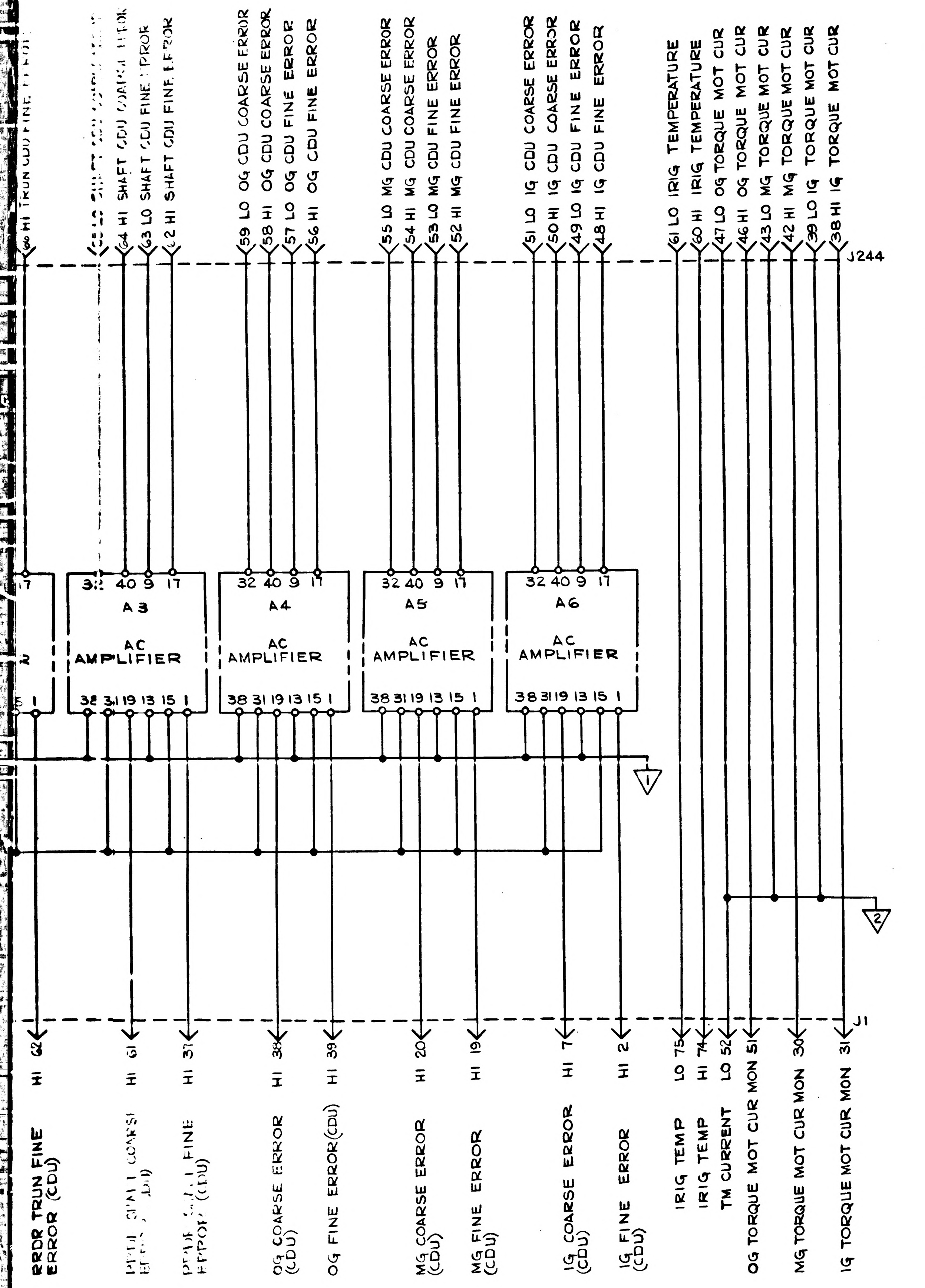
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PIN, LOCATING
(INSEPARABLE ASSEMBLY)

CODE IDENT NO.	SIZE	
99974	C	6900122
SCALE FULL		SHEET 1 OF 1

15 MAR 66

MIL 1077C-P


60 HI TRUN CDU FINE ERROR
65 LO SHAFT CDU COARSE ERROR
64 HI SHAFT CDU COARSE ERROR
63 LO SHAFT CDU FINE ERROR
62 HI SHAFT CDU FINE ERROR
59 LO OG CDU COARSE ERROR
58 HI OG CDU COARSE ERROR
57 LO OG CDU FINE ERROR
56 HI OG CDU FINE ERROR
55 LO MG CDU COARSE ERROR
54 HI MG CDU COARSE ERROR
53 LO MG CDU FINE ERROR
52 HI MG CDU FINE ERROR
51 LO IG CDU COARSE ERROR
50 HI IG CDU COARSE ERROR
49 LO IG CDU FINE ERROR
48 HI IG CDU FINE ERROR
61 LO IRIG TEMPERATURE
60 HI IRIG TEMPERATURE
47 LO OG TORQUE MOT CUR
46 HI OG TORQUE MOT CUR
43 LO MG TORQUE MOT CUR
42 HI MG TORQUE MOT CUR
39 LO IG TORQUE MOT CUR
38 HI IG TORQUE MOT CUR
J244
A3 AC AMPLIFIER
A4 AC AMPLIFIER
A5 AC AMPLIFIER
A6 AC AMPLIFIER
32 40 9 17
38 31 19 13 15 1
1
2
J1
HI 62 RRDR TRUN FINE ERROR (CDU)
HI 61 SHAFT COARSE ERROR (CDU)
HI 31 SHAFT FINE ERROR (CDU)
HI 38 OG COARSE ERROR (CDU)
HI 39 OG FINE ERROR (CDU)
HI 20 MG COARSE ERROR (CDU)
HI 19 MG FINE ERROR (CDU)
HI 7 IG COARSE ERROR (CDU)
HI 2 IG FINE ERROR (CDU)
LO 75 IRIG TEMP
HI 74 IRIG TEMP
LO 52 TM CURRENT
51 OG TORQUE MOT CUR MON
30 MG TORQUE MOT CUR MON
31 IG TORQUE MOT CUR MON

UNUSED TERMINALS

REF DESIG	TERMINAL NO.
J1	1,3,4,5,9-15, 22 28, 29,40,44,49 50
J243	1,2,3,4,7,9,10,11,12, 19,21,23,25,26,27, 36,37,38,40,41,45
J244	3,16,17,80-85
S2	7,8,9,10

1 SEPARATED SYMBOL LOCATIONS

REF DESIG	SHEET, ZONE
A9A	E21
A9B	E13
A18A	C22
A18B	C16
A18C	C14

SHEET, ZONE	REF DESIG	PART NUMBER	DESCRIPTION	SCHEMATIC DIAG. OR VALUE, TOL & RATING
D9	A2	1902433-011	AC AMPLIFIER	1902451
D9	A3			
D8	A4			
D8	A5			
D7	A6			
D14	A7			
E14	A8			
1	A9	1902433-011	AC AMPLIFIER	1902451
E21	A10	1902434-011	LINE DRIVE AMPLIFER	1902448
E11	A12	2901154-011	GLITCH DETECTOR	2901155
E11	A13			
E12	A14			
E12	A15			
E12	A16			
E13	A17	2901154-011	GLITCH DETECTOR	2901155
1	A18	6900141-011	ATTENUATOR ASSY	6900107
D22	A20	2901063-011	PHASE DIFF CKT BD ASSY	2900988
D19	A21	6900118-011	ELECTRONIC COMPONENTS ASSY	
	A21CR1	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A21CR2	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A21CR3	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A21K1	1015832-218	RELAY	
	A21K2	1015832-218	RELAY	
	A21K3	1015832-218	RELAY	
D15	A22	6900118-011	ELECTRONIC COMPONENTS ASSY	
	A22CR1	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A22CR2	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A22CR3	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A22K1	1015832-218	RELAY	
	A22K2	1015832-218	RELAY	
	A22K3	1015832-218	RELAY	
D17	A23	6900118-011	ELECTRONIC COMPONENTS ASSY	
	A23CR1	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A23CR2	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A23CR3	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A23K1	1015832-218	RELAY	
	A23K2	1015832-218	RELAY	
	A23K3	1015832-218	RELAY	
D20	A24	6900120-011	ELECTRONIC COMPONENTS ASSY	
	A24CR1	IN645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A24K1	1015832-18	RELAY	
	A24R1	RN60C4531F	(1896976-352) RESISTOR MIL-R-10509/1	4.53K
	A24R2	RN60C4531F	(1896976-352) RESISTOR MIL-R-10509/1	4.53K
	A24R3	RN60C4531F	(1896976-352) RESISTOR MIL-R-10509/1	4.53K
	E1			
	E2			
	E3			
	E4			
C15	F1	F02B250V1/2	(1897099-025) FUSE-CARTRIDGE MIL-F-15160/2	.5 AMP
	J1	6900132	CONNECTOR	
	J232	MS3102R14S-7S(C)	(1896916-107) CONNECTOR	
	J243	1897252-109	CONNECTOR	
	J244	1897247-001	CONNECTOR	
C15	S1	1016265-004	SWITCH-TOGGLE	
E21	S2	1897379-001	-ROTARY	
C15	S3	1016265-004	-TOGGLE	
D16	S4	-006		
B17	S5	-006		
B17	S6	1016265-006	SWITCH -TOGGLE	
	XF1	MS26572-1	FUSEHOLDER	

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
	A	REVISED PER D.O. 61818		[illegible]	[illegible]
	B	REVISED PER MXC 210964		11 APR 66	RWH
	C	REVISED PER MXC 211546		[illegible]	LK EF
	D	REVISED PER MXC-211823		28 APR 66	RWH
	E	INITIAL RELEASE CLASS A PER TDRR 28598		2 MAY 66	EF

6900088-011	6900088-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

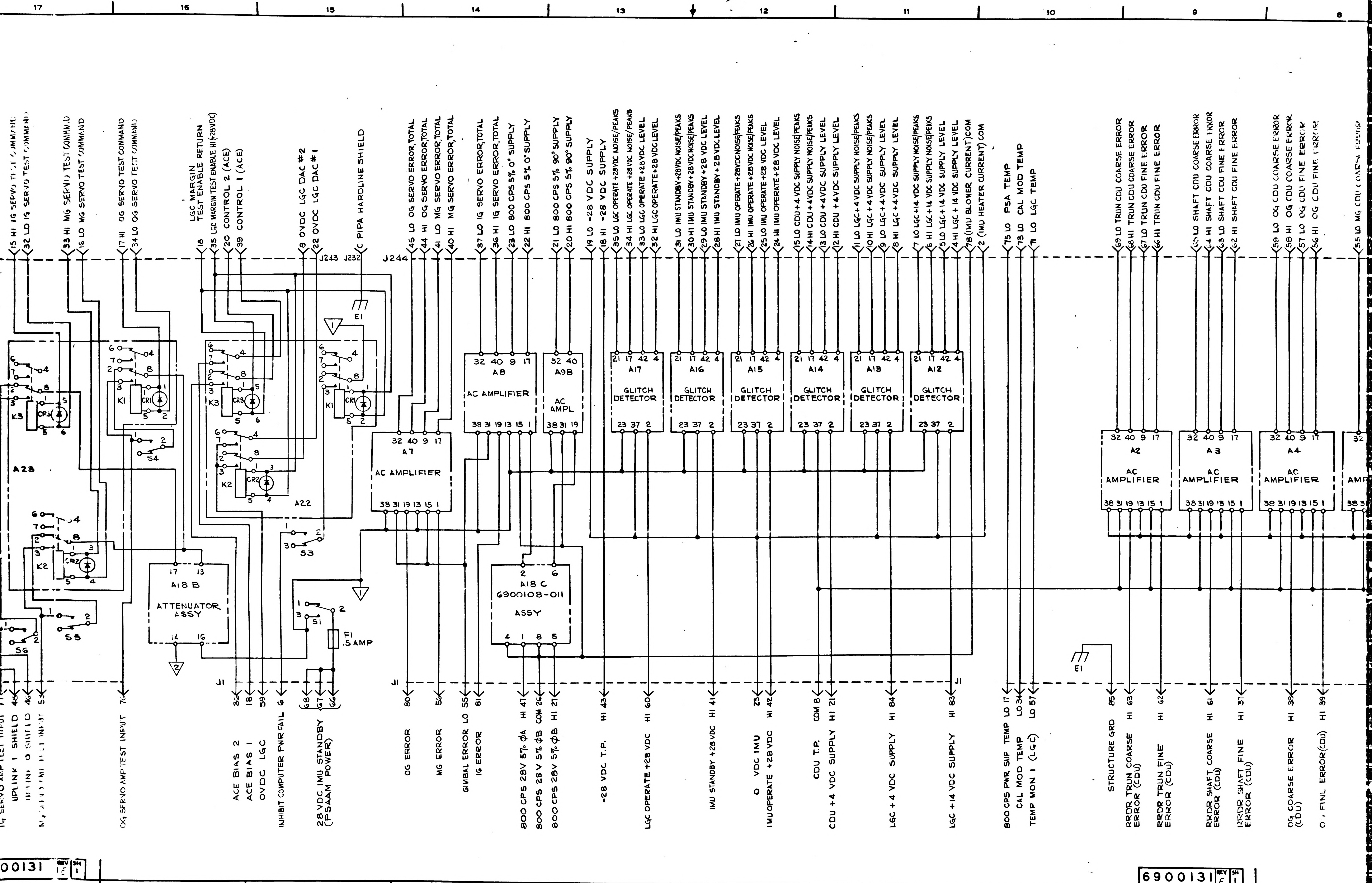
AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS.
DRAWN M. Grabner DATE 4-MAR 66
CHECKED Ed Foster 10MAR 66
APPROVAL 5/4/66
CONTRACT NAS9-497
NASA APPROVAL
MIT APPROVAL 5-9-66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM, ELECTRICAL
PSA ADAPTER MODULE
(LEM)

SIZE J3 | CODE IDENT NO. 99974 | 6900131
SCALE — | SHEET 1 OF 1

6900131 F 1



17 16 15 14 13 12 11 10 9 8
15 HI IG SERVO TEST COMMAND
32 LO IG SERVO TEST COMMAND
33 HI MG SERVO TEST COMMAND
16 LO MG SERVO TEST COMMAND
17 HI OG SERVO TEST COMMAND
34 LO OG SERVO TEST COMMAND
18 LGC MARGIN TEST ENABLE RETURN
35 LGC MARGIN TEST ENABLE HI (+28VDC)
20 CONTROL 2 (ACE)
39 CONTROL 1 (ACE)
8 OVDC LGC DAC #2
22 OVDC LGC DAC #1
C PIPA HARDLINE SHIELD
J243 J232 J244
45 LO OG SERVO ERROR,TOTAL
44 HI OG SERVO ERROR,TOTAL
41 LO MG SERVO ERROR,TOTAL
40 HI MG SERVO ERROR,TOTAL
37 LO IG SERVO ERROR,TOTAL
36 HI IG SERVO ERROR,TOTAL
23 LO 800 CPS 5% 0° SUPPLY
22 HI 800 CPS 5% 0° SUPPLY
21 LO 800 CPS 5% 90° SUPPLY
20 HI 800 CPS 5% 90° SUPPLY
19 LO -28 VDC SUPPLY
18 HI -28 VDC SUPPLY
35 LO LGC OPERATE +28VDC NOISE/PEAKS
34 HI LGC OPERATE +28VDC NOISE/PEAKS
33 LO LGC OPERATE +28VDC LEVEL
32 HI LGC OPERATE +28VDC LEVEL
31 LO IMU STANDBY +28VDC NOISE/PEAKS
30 HI IMU STANDBY +28VDC NOISE/PEAKS
29 LO IMU STANDBY +28 VDC LEVEL
28 HI IMU STANDBY +28 VDC LEVEL
27 LO IMU OPERATE +28VDC NOISE/PEAKS
26 HI IMU OPERATE +28VDC NOISE/PEAKS
25 LO IMU OPERATE +28 VDC LEVEL
24 HI IMU OPERATE +28 VDC LEVEL
15 LO CDU +4 VDC SUPPLY NOISE/PEAKS
14 HI CDU +4 VDC SUPPLY NOISE/PEAKS
13 LO CDU +4 VDC SUPPLY LEVEL
12 HI CDU +4VDC SUPPLY LEVEL
11 LO LGC +4 VDC SUPPLY NOISE/PEAKS
10 HI LGC +4 VDC SUPPLY NOISE/PEAKS
9 LO LGC +4 VDC SUPPLY LEVEL
8 HI LGC +4 VDC SUPPLY LEVEL
7 LO LGC +14 VDC SUPPLY NOISE/PEAKS
6 HI LGC +14 VDC SUPPLY NOISE/PEAKS
5 LO LGC +14 VDC SUPPLY LEVEL
4 HI LGC +14 VDC SUPPLY LEVEL
78 (IMU BLOWER CURRENT) COM
2 (IMU HEATER CURRENT) COM
75 LO PSA TEMP
73 LO CAL MOD TEMP
71 LO LGC TEMP
69 LO TRUN CDU COARSE ERROR
68 HI TRUN CDU COARSE ERROR
67 LO TRUN CDU FINE ERROR
66 HI TRUN CDU FINE ERROR
65 LO SHAFT CDU COARSE ERROR
64 HI SHAFT CDU COARSE ERROR
63 LO SHAFT CDU FINE ERROR
62 HI SHAFT CDU FINE ERROR
59 LO OG CDU COARSE ERROR
58 HI OG CDU COARSE ERROR
57 LO OG CDU FINE ERROR
56 HI OG CDU FINE ERROR
55 LO MG CDU COARSE ERROR
A23 K3 CR3 K1 CR1 S4 K2 CR2 S5 S6
A22 K3 CR3 K2 CR2 S3
K1 CR1 E1
A18 B ATTENUATOR ASSY 17 13 14 16
S1 F1 .5 AMP
A7 AC AMPLIFIER 32 40 9 17 38 31 19 13 15 1
A8 AC AMPLIFIER 32 40 9 17 38 31 19 13 15 1
A9B AC AMPL 32 40 38 31 19
A18 C 6900108-011 ASSY 2 6 4 1 8 5
A17 GLITCH DETECTOR 21 17 42 4 23 37 2
A16 GLITCH DETECTOR
A15 GLITCH DETECTOR
A14 GLITCH DETECTOR
A13 GLITCH DETECTOR
A12 GLITCH DETECTOR
A2 AC AMPLIFIER 32 40 9 17 38 31 19 13 15 1
A3 AC AMPLIFIER
A4 AC AMPLIFIER
AMP
E1
J1
IG SERVO AMP TEST INPUT 77
UPLINK 1 SHIELD 45
UPLINK 0 SHIELD 46
MG SERVO AMP TEST INPUT 54
OG SERVO AMP TEST INPUT 76
ACE BIAS 2 36
ACE BIAS 1 18
OVDC LGC 59
INHIBIT COMPUTER PWR FAIL 6
28 VDC IMU STANDBY (PSAAM POWER) 68 67 66
OG ERROR 80
MG ERROR 56
GIMBAL ERROR LO 55
IG ERROR 81
800 CPS 28V 5% ØA HI 47
800 CPS 28V 5% ØB COM 26
800 CPS 28V 5% ØB HI 27
-28 VDC T.P. HI 43
LGC OPERATE +28 VDC HI 60
IMU STANDBY +28 VDC HI 41
O VDC IMU 23
IMU OPERATE +28 VDC HI 42
CDU T.P. COM 8
CDU +4 VDC SUPPLY HI 21
LGC +4 VDC SUPPLY HI 84
LGC +14 VDC SUPPLY HI 83
800 CPS PWR SUP TEMP LO 17
CAL MOD TEMP LO 34
TEMP MON 1 (LGC) LO 57
STRUCTURE GRD 85
RRDR TRUN COARSE ERROR (CDU) HI 63
RRDR TRUN FINE ERROR (CDU) HI 62
RRDR SHAFT COARSE ERROR (CDU) HI 61
RRDR SHAFT FINE ERROR (CDU) HI 31
OG COARSE ERROR (CDU) HI 38
OG FINE ERROR (CDU) HI 39

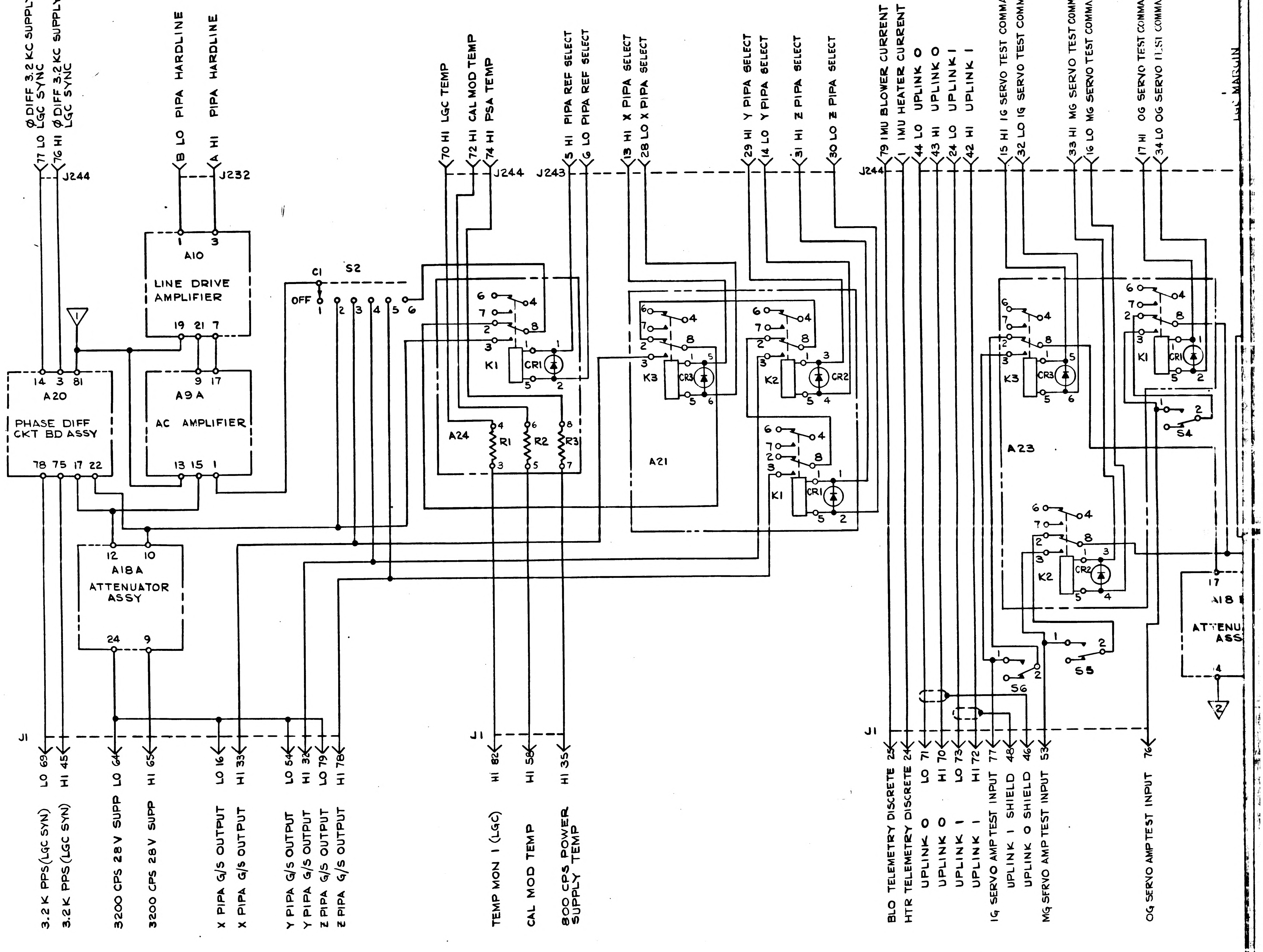
6900131 REV E SH 1

276900131

AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION
MILWAUKEE, WISCONSIN
6900131

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL PART NUMBERS ARE FOR REFERENCE ONLY.
3. RELAYS ARE SHOWN IN THE UNENERGIZED OR "OFF" POSITION.
4. LAST NUMBER USED ▽ = 2
5. DRAWINGS FOR REFERENCE:
   6900088 ASSEMBLY DRAWING
6. SIGNAL DESCRIPTIONS
   ▽1 +28 VDC IMU STANDBY (PSAAM POWER) HI
   ▽2 TM CURRENT LO.



77 LO Ø DIFF 3.2 KC SUPPLY/ LGC SYNC
76 HI Ø DIFF 3.2 KC SUPPLY/ LGC SYNC
J244
B LO PIPA HARDLINE
A HI PIPA HARDLINE
J232
A10
LINE DRIVE AMPLIFIER
1 3 19 21 7
A9A
AC AMPLIFIER
9 17 13 15 1
A20
PHASE DIFF CKT BD ASSY
14 3 81 78 75 17 22
A18A
ATTENUATOR ASSY
12 10 24 9
C1 S2
OFF 1 2 3 4 5 6
70 HI LGC TEMP
72 HI CAL MOD TEMP
74 HI PSA TEMP
J244 J243
5 HI PIPA REF SELECT
6 LO PIPA REF SELECT
13 HI X PIPA SELECT
28 LO X PIPA SELECT
29 HI Y PIPA SELECT
14 LO Y PIPA SELECT
31 HI Z PIPA SELECT
30 LO Z PIPA SELECT
79 IMU BLOWER CURRENT
1 IMU HEATER CURRENT
44 LO UPLINK 0
43 HI UPLINK 0
24 LO UPLINK 1
42 HI UPLINK 1
15 HI IG SERVO TEST COMMAND
32 LO IG SERVO TEST COMMAND
33 HI MG SERVO TEST COMMAND
16 LO MG SERVO TEST COMMAND
17 HI OG SERVO TEST COMMAND
34 LO OG SERVO TEST COMMAND
K1 CR1 K2 CR2 K3 CR3
A24 R1 R2 R3
A21
A23
S4 S5 S6
A18
ATTENU ASS
J1
LO 69 3.2 K PPS (LGC SYN)
HI 45 3.2 K PPS (LGC SYN)
LO 64 3200 CPS 28V SUPP
HI 65 3200 CPS 28V SUPP
LO 16 X PIPA G/S OUTPUT
HI 33 X PIPA G/S OUTPUT
LO 54 Y PIPA G/S OUTPUT
HI 32 Y PIPA G/S OUTPUT
LO 79 Z PIPA G/S OUTPUT
HI 78 Z PIPA G/S OUTPUT
HI 82 TEMP MON 1 (LGC)
HI 58 CAL MOD TEMP
HI 35 800 CPS POWER SUPPLY TEMP
25 BLO TELEMETRY DISCRETE
24 HTR TELEMETRY DISCRETE
LO 71 UPLINK 0
HI 70 UPLINK 0
LO 73 UPLINK 1
HI 72 UPLINK 1
77 IG SERVO AMP TEST INPUT
48 UPLINK 1 SHIELD
46 UPLINK 0 SHIELD
53 MG SERVO AMP TEST INPUT
76 OG SERVO AMP TEST INPUT

6900131 REV E SH 1

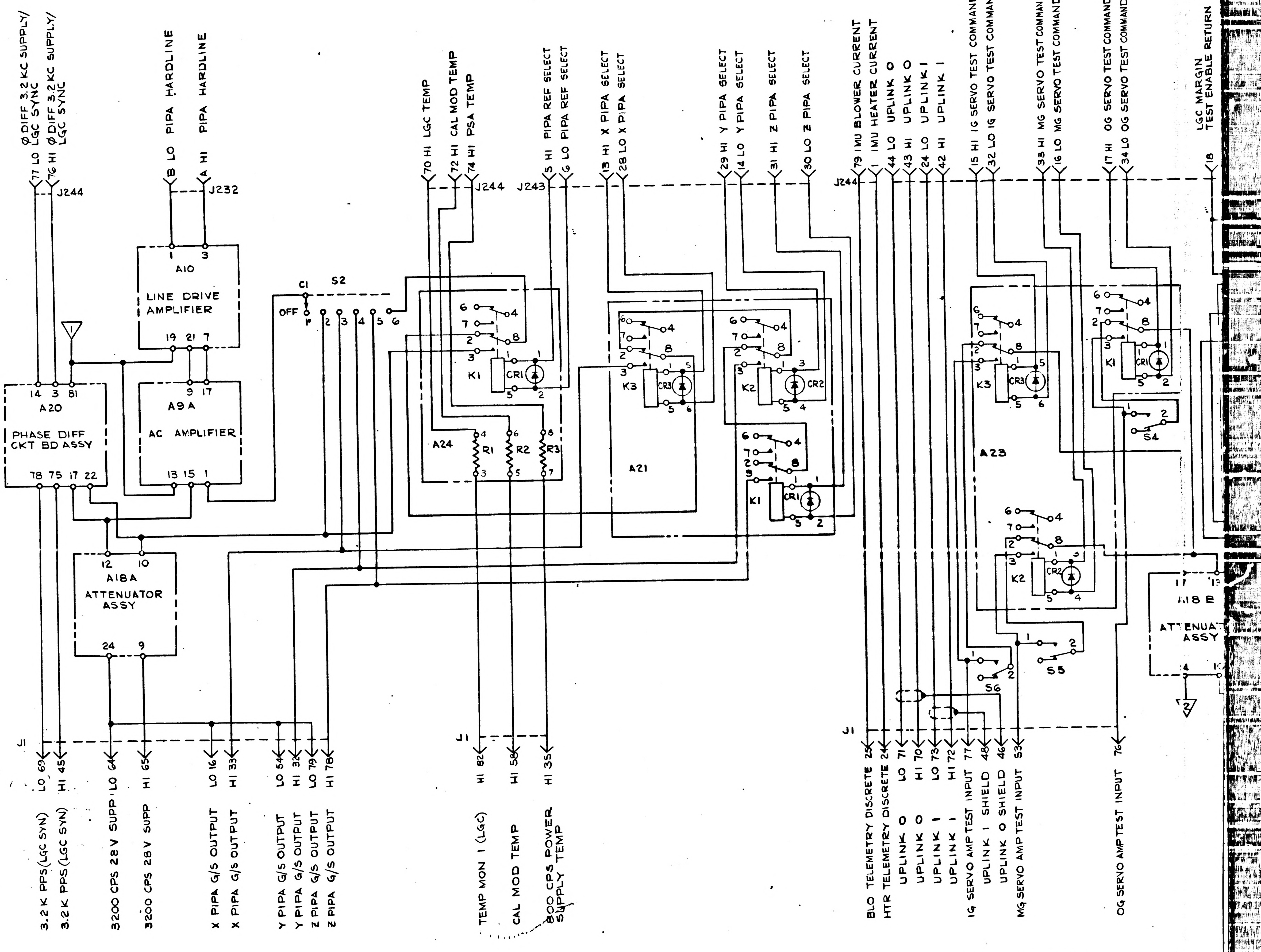
MIL FORM 1080 J3

17Z6900131

6900131

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL PART NUMBERS ARE FOR REFERENCE ONLY.
3. RELAYS ARE SHOWN IN THE UNENERGIZED OR "OFF" POSITION.
4. LAST NUMBER USED ▽ = 2
5. DRAWINGS FOR REFERENCE:
   6900088 ASSEMBLY DRAWING
6. SIGNAL DESCRIPTIONS
   1▽ +28 VDC IMU STANDBY (PSAAM POWER) HI
   2▽ TM CURRENT LO



77 LO Ø DIFF 3.2 KC SUPPLY/ LGC SYNC
76 HI Ø DIFF 3.2 KC SUPPLY/ LGC SYNC
J244
B LO PIPA HARDLINE
A HI PIPA HARDLINE
J232
A10
LINE DRIVE AMPLIFIER
A20
PHASE DIFF CKT BD ASSY
A9A
AC AMPLIFIER
A18A
ATTENUATOR ASSY
C1
S2
OFF
70 HI LGC TEMP
72 HI CAL MOD TEMP
74 HI PSA TEMP
J243
5 HI PIPA REF SELECT
6 LO PIPA REF SELECT
13 HI X PIPA SELECT
28 LO X PIPA SELECT
29 HI Y PIPA SELECT
14 LO Y PIPA SELECT
31 HI Z PIPA SELECT
30 LO Z PIPA SELECT
79 IMU BLOWER CURRENT
1 IMU HEATER CURRENT
44 LO UPLINK 0
43 HI UPLINK 0
24 LO UPLINK 1
42 HI UPLINK 1
15 HI IG SERVO TEST COMMAND
32 LO IG SERVO TEST COMMAND
33 HI MG SERVO TEST COMMAND
16 LO MG SERVO TEST COMMAND
17 HI OG SERVO TEST COMMAND
34 LO OG SERVO TEST COMMAND
18 LGC MARGIN TEST ENABLE RETURN
K1
CR1
K2
CR2
K3
CR3
A24
R1
R2
R3
A21
A23
S4
S5
S6
A18B
ATTENUAT ASSY
J1
LO 69 3.2 K PPS (LGC SYN)
HI 45 3.2 K PPS (LGC SYN)
LO 64 3200 CPS 28 V SUPP
HI 65 3200 CPS 28 V SUPP
LO 16 X PIPA G/S OUTPUT
HI 33 X PIPA G/S OUTPUT
LO 54 Y PIPA G/S OUTPUT
HI 32 Y PIPA G/S OUTPUT
LO 79 Z PIPA G/S OUTPUT
HI 78 Z PIPA G/S OUTPUT
HI 82 TEMP MON 1 (LGC)
HI 58 CAL MOD TEMP
HI 35 800 CPS POWER SUPPLY TEMP
25 BLO TELEMETRY DISCRETE
24 HTR TELEMETRY DISCRETE
LO 71 UPLINK 0
HI 70 UPLINK 0
LO 73 UPLINK 1
HI 72 UPLINK 1
77 IG SERVO AMP TEST INPUT
48 UPLINK 1 SHIELD
46 UPLINK 0 SHIELD
53 MG SERVO AMP TEST INPUT
76 OG SERVO AMP TEST INPUT

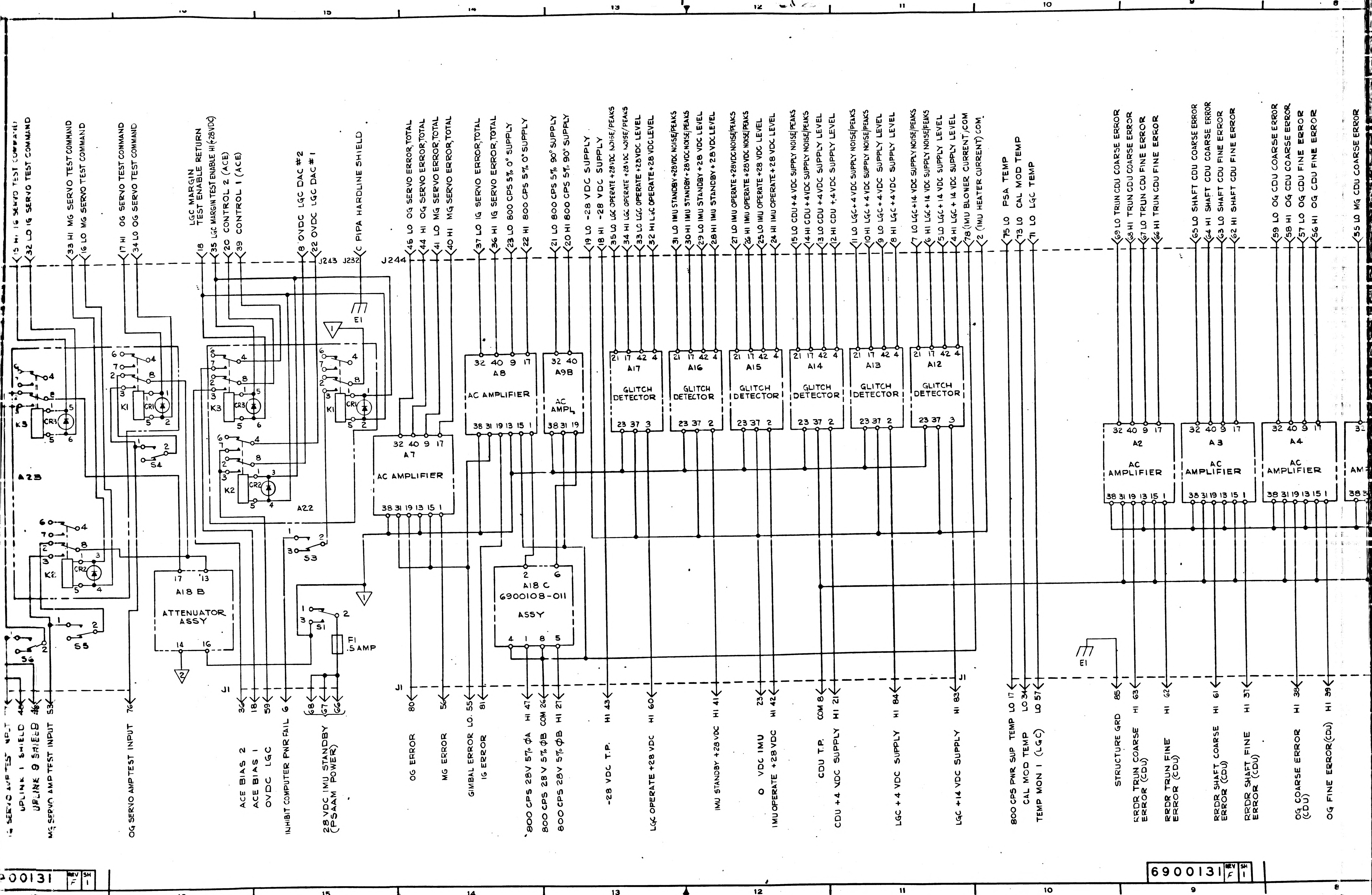
6900131	REV F	SH 1

MIL FORM 1050 J3

24 23 22 21 20 19 18 17 16

H G F E D C B A

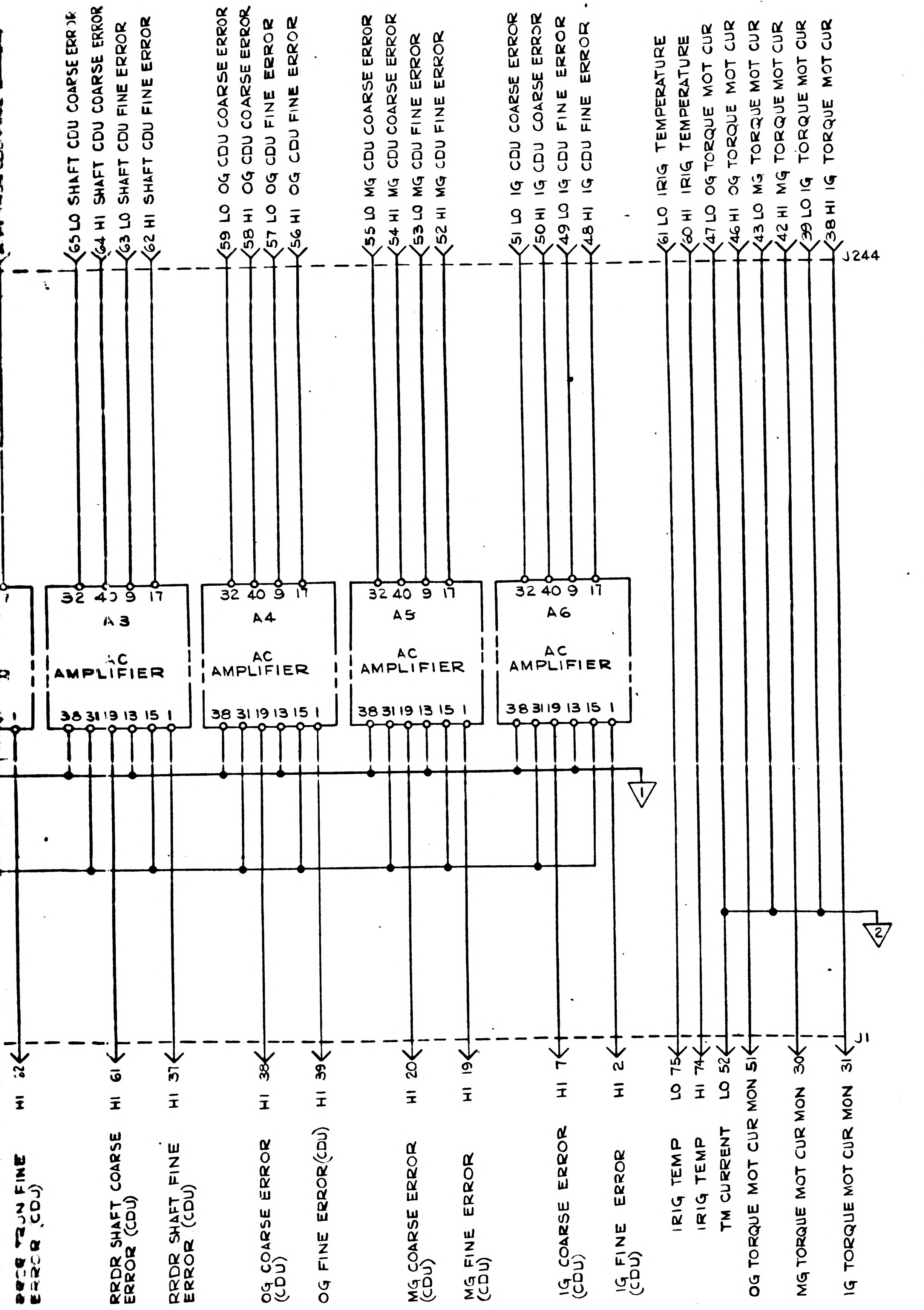
1/6900131


15 HI IG SERVO TEST COMMAND
32 LO IG SERVO TEST COMMAND
33 HI MG SERVO TEST COMMAND
16 LO MG SERVO TEST COMMAND
17 HI OG SERVO TEST COMMAND
34 LO OG SERVO TEST COMMAND
18 LGC MARGIN TEST ENABLE RETURN
35 LGC MARGIN TEST ENABLE HI (+28VDC)
20 CONTROL 2 (ACE)
39 CONTROL 1 (ACE)
8 OVDC LGC DAC #2
22 OVDC LGC DAC #1
C PIPA HARDLINE SHIELD
J243
J232
J244
46 LO OG SERVO ERROR, TOTAL
44 HI OG SERVO ERROR, TOTAL
41 LO MG SERVO ERROR, TOTAL
40 HI MG SERVO ERROR, TOTAL
37 LO IG SERVO ERROR, TOTAL
36 HI IG SERVO ERROR, TOTAL
23 LO 800 CPS 5% 0° SUPPLY
22 HI 800 CPS 5% 0° SUPPLY
21 LO 800 CPS 5% 90° SUPPLY
20 HI 800 CPS 5% 90° SUPPLY
19 LO -28 VDC SUPPLY
18 HI -28 VDC SUPPLY
35 LO LGC OPERATE +28 VDC NOISE/PEAKS
34 HI LGC OPERATE +28 VDC NOISE/PEAKS
33 LO LGC OPERATE +28 VDC LEVEL
32 HI LGC OPERATE +28 VDC LEVEL
31 LO IMU STANDBY +28VDC NOISE/PEAKS
30 HI IMU STANDBY +28VDC NOISE/PEAKS
29 LO IMU STANDBY +28 VDC LEVEL
28 HI IMU STANDBY +28 VDC LEVEL
27 LO IMU OPERATE +28VDC NOISE/PEAKS
26 HI IMU OPERATE +28VDC NOISE/PEAKS
25 LO IMU OPERATE +28 VDC LEVEL
24 HI IMU OPERATE +28 VDC LEVEL
15 LO CDU +4 VDC SUPPLY NOISE/PEAKS
14 HI CDU +4VDC SUPPLY NOISE/PEAKS
13 LO CDU +4VDC SUPPLY LEVEL
12 HI CDU +4VDC SUPPLY LEVEL
11 LO LGC +4 VDC SUPPLY NOISE/PEAKS
10 HI LGC +4 VDC SUPPLY NOISE/PEAKS
9 LO LGC +4VDC SUPPLY LEVEL
8 HI LGC +4VDC SUPPLY LEVEL
7 LO LGC +14 VDC SUPPLY NOISE/PEAKS
6 HI LGC +14 VDC SUPPLY NOISE/PEAKS
5 LO LGC +14 VDC SUPPLY LEVEL
4 HI LGC +14 VDC SUPPLY LEVEL
78 (IMU BLOWER CURRENT) COM
2 (IMU HEATER CURRENT) COM
75 LO PSA TEMP
73 LO CAL MOD TEMP
71 LO LGC TEMP
69 LO TRUN CDU COARSE ERROR
68 HI TRUN CDU COARSE ERROR
67 LO TRUN CDU FINE ERROR
66 HI TRUN CDU FINE ERROR
65 LO SHAFT CDU COARSE ERROR
64 HI SHAFT CDU COARSE ERROR
63 LO SHAFT CDU FINE ERROR
62 HI SHAFT CDU FINE ERROR
59 LO OG CDU COARSE ERROR
58 HI OG CDU COARSE ERROR
57 LO OG CDU FINE ERROR
56 HI OG CDU FINE ERROR
55 LO MG CDU COARSE ERROR
K3
CR3
K1
CR1
K2
CR2
A23
A22
S4
S5
S6
S3
S1
F1 .5 AMP
E1
A18 B ATTENUATOR ASSY
A7 AC AMPLIFIER
A8 AC AMPLIFIER
A9B AC AMPL
A18 C 6900108-011 ASSY
A17 GLITCH DETECTOR
A16 GLITCH DETECTOR
A15 GLITCH DETECTOR
A14 GLITCH DETECTOR
A13 GLITCH DETECTOR
A12 GLITCH DETECTOR
A2 AC AMPLIFIER
A3 AC AMPLIFIER
A4 AC AMPLIFIER
AMP
J1
IG SERVO AMP TEST INPUT
UPLINK 1 SHIELD 48
UPLINK 9 SHIELD 46
MG SERVO AMP TEST INPUT 53
OG SERVO AMP TEST INPUT 76
ACE BIAS 2 36
ACE BIAS 1 18
OVDC LGC 59
INHIBIT COMPUTER PWR FAIL 6
28 VDC IMU STANDBY (PSAAM POWER) 68 67 66
OG ERROR 80
MG ERROR 56
GIMBAL ERROR LO 55
IG ERROR 81
800 CPS 28V 5% φA HI 47
800 CPS 28V 5% φB COM 26
800 CPS 28V 5% φB HI 27
-28 VDC T.P. HI 43
LGC OPERATE +28 VDC HI 60
IMU STANDBY +28 VDC HI 41
0 VDC IMU 23
IMU OPERATE +28 VDC HI 42
CDU T.P. COM 8
CDU +4 VDC SUPPLY HI 21
LGC +4 VDC SUPPLY HI 84
LGC +14 VDC SUPPLY HI 83
800 CPS PWR SUP TEMP LO 17
CAL MOD TEMP LO 34
TEMP MON 1 (LGC) LO 57
STRUCTURE GRD 85
RRDR TRUN COARSE ERROR (CDU) HI 63
RRDR TRUN FINE ERROR (CDU) HI 62
RRDR SHAFT COARSE ERROR (CDU) HI 61
RRDR SHAFT FINE ERROR (CDU) HI 37
OG COARSE ERROR (CDU) HI 38
OG FINE ERROR (CDU) HI 39
17
16
15
14
13
12
11
10
9
8

00131 REV F SH 1

6900131 REV F SH 1

2/6900131


65 LO SHAFT CDU COARSE ERROR
64 HI SHAFT CDU COARSE ERROR
63 LO SHAFT CDU FINE ERROR
62 HI SHAFT CDU FINE ERROR
59 LO OG CDU COARSE ERROR
58 HI OG CDU COARSE ERROR
57 LO OG CDU FINE ERROR
56 HI OG CDU FINE ERROR
55 LO MG CDU COARSE ERROR
54 HI MG CDU COARSE ERROR
53 LO MG CDU FINE ERROR
52 HI MG CDU FINE ERROR
51 LO IG CDU COARSE ERROR
50 HI IG CDU COARSE ERROR
49 LO IG CDU FINE ERROR
48 HI IG CDU FINE ERROR
61 LO IRIG TEMPERATURE
60 HI IRIG TEMPERATURE
47 LO OG TORQUE MOT CUR
46 HI OG TORQUE MOT CUR
43 LO MG TORQUE MOT CUR
42 HI MG TORQUE MOT CUR
39 LO IG TORQUE MOT CUR
38 HI IG TORQUE MOT CUR
J244
32 40 9 17
A3
AC AMPLIFIER
38 31 19 13 15 1
32 40 9 17
A4
AC AMPLIFIER
38 31 19 13 15 1
32 40 9 17
A5
AC AMPLIFIER
38 31 19 13 15 1
32 40 9 17
A6
AC AMPLIFIER
38 31 19 13 15 1
1
2
J1
HI 61
HI 37
HI 38
HI 39
HI 20
HI 19
HI 7
HI 2
LO 75
HI 74
LO 52
51
30
31
RRDR SHAFT COARSE ERROR (CDU)
RRDR SHAFT FINE ERROR (CDU)
OG COARSE ERROR (CDU)
OG FINE ERROR (CDU)
MG COARSE ERROR (CDU)
MG FINE ERROR (CDU)
IG COARSE ERROR (CDU)
IG FINE ERROR (CDU)
IRIG TEMP
IRIG TEMP
TM CURRENT
OG TORQUE MOT CUR MON
MG TORQUE MOT CUR MON
IG TORQUE MOT CUR MON

UNUSED TERMINALS

REF DESIG	TERMINAL NO.
J1	1, 3, 4, 5, 9-15, 22, 28, 29, 40, 44, 49, 50
J243	1, 2, 3, 4, 7, 9, 10, 11, 12, 13, 21, 23, 25, 26, 27, 36, 37, 38, 40, 41, 45
J244	3, 16, 17, 80-85
S2	7, 8, 9, 10

▷1 SEPARATED SYMBOL LOCATIONS

REF DESIG	SHEET, ZONE
A9A A9B	E21 E13
A18A A18B A18C	C22 C16 C14

SHEET, ZONE	REF DESIG	PART NUMBER	DESCRIPTION	SCHEMATIC DIAG OR VALUE, TOL & RATING
D9	A2	1902433-011	AC AMPLIFIER	1902451
D9	A3			
D8	A4			
D8	A5			
D7	A6			
D14	A7			
E14	A8			
▷1	A9	1902433-011	AC AMPLIFIER	1902451
E21	A10	1902434-011	LINE DRIVE AMPLIFER	1902448
E11	A12	2901154-011	GLITCH DETECTOR	2901155
E11	A13			
E12	A14			
E12	A15			
E12	A16			
E13	A17	2901154-011	GLITCH DETECTOR	2901155
▷1	A18	6900141-011	ATTENUATOR ASSY	6900107
D22	A20	2901063-011	PHASE DIFF CKT BD ASSY	2900988
D19	A21	6900118-011	ELECTRONIC COMPONENTS ASSY	
	A21CR1	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A21CR2	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A21CR3	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A21K1	1015832-218	RELAY	
	A21K2	1015832-218	RELAY	
	A21K3	1015832-218	RELAY	
D15	A22	6900118-011	ELECTRONIC COMPONENTS ASSY	
	A22CR1	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A22CR2	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A22CR3	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A22K1	1015832-218	RELAY	
	A22K2	1015832-218	RELAY	
	A22K3	1015832-218	RELAY	
D17	A23	6900118-011	ELECTRONIC COMPONENTS ASSY	
	A23CR1	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A23CR2	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A23CR3	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A23K1	1015832-218	RELAY	
	A23K2	1015832-218	RELAY	
	A23K3	1015832-218	RELAY	
D20	A24	6900120-011	ELECTRONIC COMPONENTS ASSY	
	A24CR1	1N645	(1896966-004) SEMICONDUCTOR MIL-S-19500	
	A24K1	1015832-18	RELAY	
	A24R1	RN60C4531F	(1896976-352) RESISTOR MIL-R-10509/1	4.53K
	A24R2	RN60C4531F	(1896976-352) RESISTOR MIL-R-10509/1	4.53K
	A24R3	RN60C4531F	(1896976-352) RESISTOR MIL-R-10509/1	4.53K
	E1			
	E2			
	E3			
	E4			
C15	F1	F02B250V1/2	(1897099-025) FUSE-CARTRIDGE MIL-F-15160/2	.5 AMP
	J1	6900132	CONNECTOR	
	J232	MS3102R14S-7S(C)	(1896916-107) CONNECTOR	
	J243	1897252-109	CONNECTOR	
	J244	1897247-001	CONNECTOR	
C15	S1	1016265-004	SWITCH-TOGGLE	
E21	S2	1897379-001	-ROTARY	
C15	S3	1016265-004	-TOGGLE	
D16	S4	-006		
B17	S5	-006		
B17	S6	1016265-006	SWITCH -TOGGLE	
	XF1	MS26572-1	FUSEHOLDER	

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPR
A		REVISED PER D.O. 61818		23 MAR 66	
B		REVISED PER MXC 210964		11 APR 66	RWH
C		REVISED PER MXC 211546			
D		REVISED PER MXC-211823		28 APR 66	RWH
E		INITIAL RELEASE CLASS A PER TDRR 22198		2 MAY 66	
F		REVISED PER TDRR 30485		66	JI

6900088-011	6900088-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN M. Gralnee DATE 4 MAR 66
CHECKED Ed Foster 18 MAR 66
APPROVAL
CONTRACT NAS9-497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

SCHEMATIC DIAGRAM, ELECTRICAL
PSA ADAPTER MODULE
(LEM)

SIZE J3 CODE IDENT NO. 99974 6900131
SCALE — SHEET 1 OF 1

APPLICATION	
NEXT ASSY	USED ON
6900043-031	6900043-031

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE CLASS A PER TDRR 28759	4 MAY 66	GC / JRS

REV															
SHEET															
REV STATUS OF SHEETS — REV	A	A	A	A	A	A	A	A	A	A	A	A	A	A
REV STATUS OF SHEETS — SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
D.O. 61896

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN Janowiak 13 APR 66
DAY MO YR
CHECKER 25 APR 66
ENGINEER C. W. Wise 25 Apr 66
APPROVAL J. M. Watson 5-5-66
CONTR NO. NAS 9-497
NASA APPROVAL
MIT APPROVAL 5/2/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, W138

SIZE	CODE IDENT. NO	
A	99974	6900134
SCALE NONE		SHEET 1 OF 14

MIL 1377A6 12-65

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	SHIELD TERMINATION FIGURES ARE PER- A - ND1002071 B - ND1002032
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.
4	APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND1002019 USING .12 INCH HIGH CHARACTERS.
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
7	SERIALIZE PER ND1002023
8	MARK IDENTIFICATION BANDS AS NOTED, .12 INCH HIGH, PER ND1002019. CENTRALIZE
9	SECURE TO CABLE USING ITEM 20, MARKING TO READ AWAY FROM CONNECTOR
10	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 17 TO SECURE WIRE BUNDLE IN STRAIN RELIEF CLAMP
11	APPLY LEAD IDENTIFICATION TO SLEEVES PER ND1002019.
12	LOCATE LEAD IDENTIFICATION SLEEVING ADJ. TO SOLDER SLEEVES

SIZE	CODE IDENT NO.	
A	99974	6900134
SCALE-NONE	REV LTR A	SHEET 2 OF 14

NOTE NUMBER	GENERAL NOTES DESCRIPTION
14	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER. A - FROM END SHIELD B - TO END SHIELD L WHITE WITH BLUE TRACER R - WHITE WITH RED TRACER. W - WHITE Y - WHITE WITH YELLOW TRACER.
15	ZIPPER TUBING SHALL HAVE -Z- TYPE TRACK, WITH .003 + OR - .001 THICK ALUMINUM FOIL.
16	SEPARATE GROUNDING STRIP FROM TUBING 4 TO 5 INCHES FROM END. SECURE STRIP STITCHING AND REMOVE FREED BACKING FOIL AS REQUIRED. CUT OFF 2 INCHES OF STRIP AND TERMINATE IN E4-B AND E5-B RESPECTIVELY.

LEAD TOLERANCE CHART

	LEAD LG	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+ .12-.00	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+ .50-.00	+.25-.25	+.25-.25	+.25-.25	
3 FT TO 10 FT	+1.00-.00				
10 FT AND OVER	+2.00-.00				

SIZE	CODE IDENT NO.	
A	99974	6900134
SCALE-NONE	REV LTR A	SHEET 3 OF 14

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900134-001	WIRE, ND1002181, TYPE 2, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, 180 FT TOT LG.
	2	1	6900134-002	WIRE, ND1002181, TYPE 1, CLASS 1, 22AWG, WHT., 77 FT TOTAL LENGTH
	3	1	6900134-004	WIRE, ND 1002181, TYPE 1, CLASS 4, WHT. JKT., 22AWG, WHT., 40 FT TOTAL LENGTH
	4	1	6900134-003	WIRE, ND 1002181, TYPE 3, CLASS 4, WHT. JKT., 22AWG, WHT/BLU, WHT/RED, WHT/YEL, 10 FT TOTAL LENGTH
5	5	1	1897250-001	CONNECTOR PLUG
5	6	1	1897249-004	CONNECTOR PLUG
5	7		1897190- 1	CONTACT PIN (FURNISHED WITH ITEM 5)
5	8		1897190- 2	CONTACT SOCKET (FURNISHED WITH ITEM 6)
5	10	2	1010763- 1	SOLDER SLEEVE
5	11	12	1010763- 2	SOLDER SLEEVE
5	14	34	1010490-228	INSULATION SLEEVING
5	15	12	1010490-232	INSULATION SLEEVING
15	16	1	6900134-005	ZIPPER TUBING PER ND1002155, TYPE III, 1.00 DIA., 11 FT. TOTAL LENGTH
	17	AR	MIL-I-631, TYPE F, FORM T, BLACK GRADE A, CLASS 1	FILLER TAPE 5/8 IN WIDE, .020 THICK

SIZE	CODE IDENT NO.	
A	99974	6900134
SCALE-NONE	REV LTR A	SHEET 4 OF 14

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
5	18	1	1016128-011	BAND, IDENTIFICATION
5	19	2	1016128-041	BAND, IDENTIFICATION
	20	AR	MIL-T-7138, TYPE P CLASS 2, BLACK	, LACING TAPE
5	21	2	1010933-105	CLAMP, CABLE
5	22	2	1015902- 45	TERMINAL LUG
5	23	2	1016006-002	SPLICE REDUCER
5	24	2	1010490-258	INSULATION, SLEEVING, ELECT.
	25	1	6900134-006	WIRE, ND1002181, TYPE 1, CLASS 1, 20AWG WHT, 16 INCHES TOTAL LENGTH
5	26	2	1016282- 16	RUBBER GROMMET.

SIZE	CODE IDENT NO.	
A	99974	6900134
SCALE-NONE	REV LTR A	SHEET 5 OF 14

CABLE ASSEMBLY W138 6900134 A

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1				2.30 2.30	2.00 2.00				A,6A B,7	11, 14 14	
A	1A	2		SHLD A1 E1					.25 .25	NO			
A	1L			P1-38 P2-38					.15 .15	NO NO		7 8	
A	1R			P1-37 P2-37					.15 .15	NO NO		7 8	
A	2	1				2.30 2.30	2.00 2.00				A,6A B,7	11, 14 14	
A	2A	2		SHLD E1					.25 .25	NO NO			
A	2L			P1-40 P2-40					.15 .15	NO NO		7 8	
A	2R			P1-39 P2-39					.15 .15	NO NO		7 8	
A	3	1				2.30 2.30	2.00 2.00				A,6A B,7	11, 14 14	
A	3A	2		SHLD A3 E1					.25 .25	NO NO			
A	3L			P1-42 P2-42					.15 .15	NO NO		7 8	
A	3R			P1-41 P2-41					.15 .15	NO NO		7 8	

SIZE A	CODE IDENT NO. 99974	6900134
SCALE-NONE	REV LTR A	SHEET 6 OF 14

CABLE ASSEMBLY W138 6900134 A

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	4	3				2.30 2.30	2.00 2.00				A,6A B,7	11, 15 15	
A	4A	2		SHLD A4 E2					.25 .25	NO NO			
A	4W			P1-46 P2-46					.15 .15	NO NO		7 8	
A	5	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 15	
A	5A	2		SHLD A5 E2					.25 .25	NO NO			
A	5W			P1-47 P2-47					.15 .15	NO NO		7 8	
A	6	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 15	
A	6A	2		SHLD A6 E2					.25 .25	NO NO			
A	6W			P1-48 P2-48					.15 .15	NO NO		7 8	
A	7	3				2.80 2.30	2.50 2.00				A,6A B,7	11, 15 15	
A	7A	2		SHLD A7 E3					.25 .25	NO NO			
A	7W			P1-49 P2-49					.15 .15	NO NO		7 8	

SIZE A	CODE IDENT NO. 99974	6900134
SCALE-NONE	REV LTR A	SHEET 7 OF 14

CABLE ASSEMBLY W138 6900134 A

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	8	1				2.80 2.50	2.50 2.00				B,7 B,7	14 14	
A	8L			P1-2 P2-2					.15 .15	NO NO		7 8	
A	8R			P1-1 P2-1					.15 .15	NO NO		7 8	
A	9	1				2.80 2.50	2.50 2.00				B,7 B,7	14 14	
A	9L			P1-4 P2-4					.15 .15	NO NO		7 8	
A	9R			P1-3 P2-3					.15 .15	NO NO		7 8	
A	10	1				2.80 2.50	2.50 2.00				B,7 B,7	14 14	
A	10L			P1-6 P2-6					.15 .15	NO NO		7 8	
A	10R			P1-5 P2-5					.15 .15	NO NO		7 8	
A	11	4				2.80 2.50	2.50 2.00				B,7 B,7	14 14	
A	11L			P1-8 P2-8					.15 .15	NO NO		7 8	
A	11R			P1-7 P2-7					.15 .15	NO NO		7 8	

SIZE A	CODE IDENT NO. 99974	6900134
SCALE-NONE	REV LTR A	SHEET 8 OF 14

CABLE ASSEMBLY W138 6900134 A

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	11Y			P1-9 P2-9					.15 .15	NO NO		7 8	
A	14	1				2.80 2.50	2.50 2.00				B,7 B,7	14 14	
A	14L			P1-30 P2-30					.15 .15	NO NO		7 8	
A	14R			P1-29 P2-29					.15 .15	NO NO		7 8	
A	15	1				3.30 2.80	3.00 2.50				A,6A B,7	11, 14 14	
A	15A	2		SHLD A15 E3					.25 .25	NO NO			
A	15L			P1-32 P2-32					.15 .15	NO NO		7 8	
A	15R			P1-31 P2-31					.15 .15	NO NO		7 8	
A	16	2		E1 E2					.25 .25	NO NO			
A	17	2		E2 E3					.15 .25	NO NO			
A	18	1				3.30 2.80	3.00 2.50				A,6B B,7	11, 14 14	
A	18A	2		SHLD A18 P1-63					.25 .15	NO NO		7	

SIZE A	CODE IDENT NO. 99974	6900134
SCALE-NONE	REV LTR A	SHEET 9 OF 14

CABLE ASSEMBLY W138 6900134 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	18L			P1-35 P2-35					.15 .15	NO NO		7 8	
A	18R			P1-34 P2-34					.15 .15	NO NO		7 8	
A	19	1				3.30 2.80	3.00 2.50				A,68 A,68	11, 14 11, 14	
A	19A	2		SHLD A19 P1-53					.25 .15	NO NO		 7	
A	19B	2		P2-53 SHLD A19					.15 .25	NO NO		8 	
A	19L			P1-52 P2-52					.15 .15	NO NO		7 8	
A	19R			P1-51 P2-51					.15 .18	NO NO		7 8	
A	23	1				3.80 3.30	3.50 3.00				8,7 8,7	14 14	
A	23L			P1-66 P2-66					.15 .15	NO NO		7 8	
A	23R			P1-65 P2-65					.15 .15	NO NO		7 8	
A	24	1				3.80 3.30	3.50 3.00				8,7 8,7	14 14	
A	24L			P1-68 P2-68					.15 .15	NO NO		7 8	

SIZE A
CODE IDENT NO. 99974
6900134
SCALE-NONE
REV LTR A
SHEET 10 OF 14

MIL 2084 9-65

CABLE ASSEMBLY W138 6900134 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	24R			P1-67 P2-67					.15 .15	NO NO		7 8	
A	25	1				3.80 3.30	3.50 3.00				8,7 8,7	14 14	
A	25L			P1-70 P2-70					.15 .15	NO NO		7 8	
A	25R			P1-69 P2-69					.15 .15	NO NO		7 8	
A	26	1				3.80 3.30	3.50 3.00				8,7 8,7	14 14	
A	26L			P1-22 P2-22					.15 .15	NO NO		7 8	
A	26R			P1-21 P2-21					.15 .15	NO NO		7 8	
A	27			P1-85 P2-85					.15 .15	NO NO		7 8	
A	28	1				3.80 3.30	3.50 3.00				8,7 8,7	14 14	
A	28L			P1-24 P2-24					.15 .15	NO NO		7 8	
A	28R			P1-23 P2-23					.15 .15	NO NO		7 8	
A	29	1				3.80 3.30	3.50 3.00				8,7 8,7	14 14	

SIZE A
CODE IDENT NO. 99974
6900134
SCALE-NONE
REV LTR A
SHEET 11 OF 14

MIL 2084 9-65

CABLE ASSEMBLY W138 6900134 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	29L			P1-26 P2-26					.15 .15	NO NO		7 8	
A	29R			P1-25 P2-25					.15 .15	NO NO		7 8	
A	30	2		P1-27 P2-27					.15 .15	NO NO		7 8	
A	31	2		E3 P1-33					.25 .15	NO NO		 7	
A	32	1				4.30 3.80	4.00 3.50				8,7 8,7	14 14	
A	32L			P1-81 P2-81					.15 .15	NO NO		7 8	
A	32R			P1-80 P2-80					.15 .15	NO NO		7 8	
A	33	1				4.30 3.80	4.00 3.50			 NO	8,7 8,7	14 14	
A	33L			P1-83 P2-83					.15 .15	NO NO		7 8	
A	33R			P1-82 P2-82					.15 .15	NO NO		7 8	
A	34	2		P1-84 P2-84					.15 .15	NO NO		7 8	
A	35	25		E4-88 E6					.16 .38	NO NO			

SIZE A
CODE IDENT NO. 99974
6900134
SCALE-NONE
REV LTR A
SHEET 12 OF 14

MIL 2084 9-65

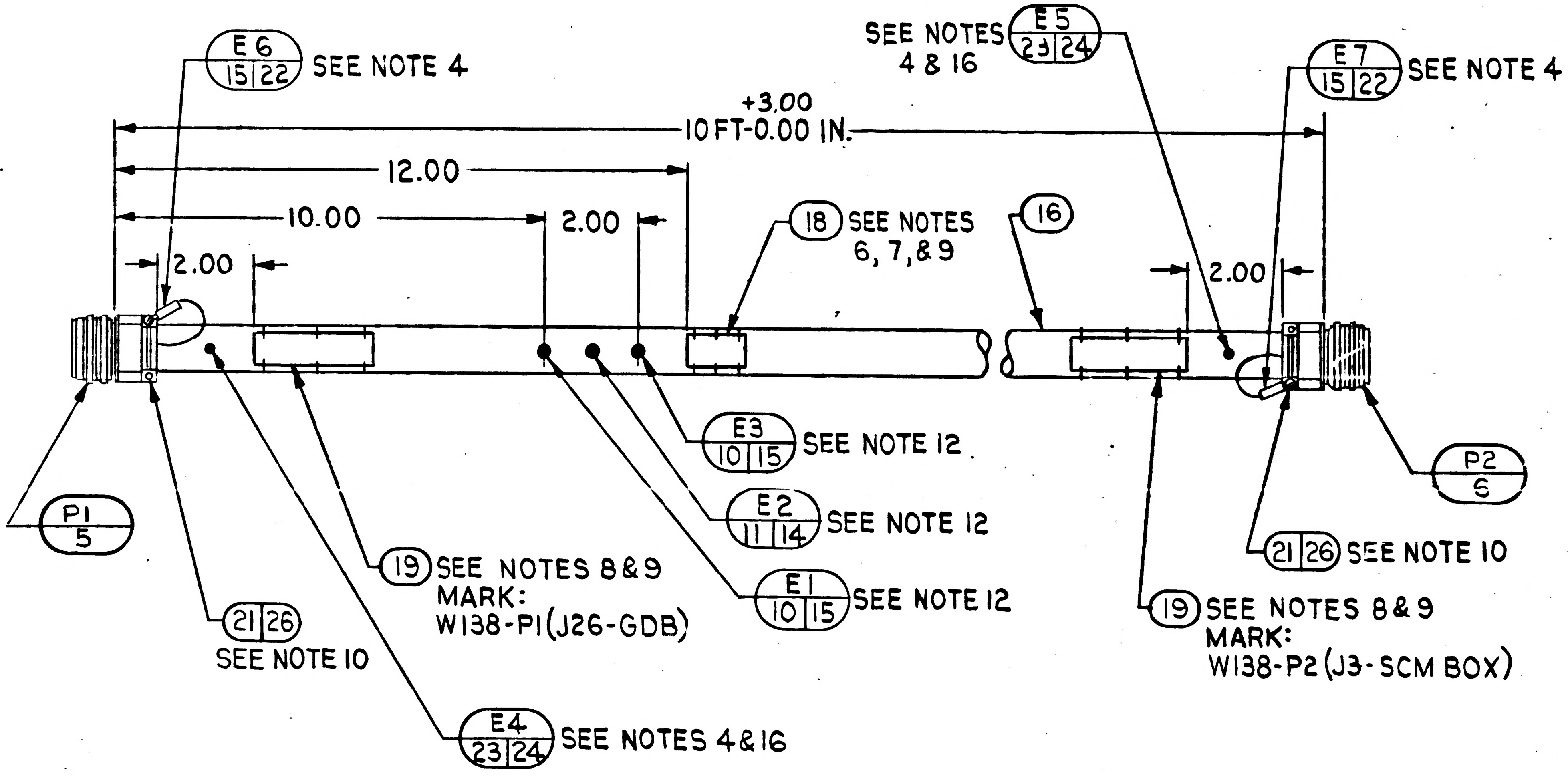
CABLE ASSEMBLY W138 6900134 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	36	25		E5-88 E7					.16 .38	NO NO			

SIZE A
CODE IDENT NO. 99974
6900134
SCALE-NONE
REV LTR A
SHEET 13 OF 14

MIL 2084 9-65

ZONE	LTR	REVISIONS TDKR 28759 DESCRIPTION	CHG. NO.	DATE	APPROVED
		SEE SHEET 1 FOR REVISION RECORD			


E6 15 22 SEE NOTE 4
SEE NOTES 4 & 16 E5 23 24
E7 15 22 SEE NOTE 4
+3.00
10 FT-0.00 IN.
12.00
10.00
2.00
2.00
18 SEE NOTES 6, 7, & 9
16
2.00
E3 10 15 SEE NOTE 12
E2 11 14 SEE NOTE 12
E1 10 15 SEE NOTE 12
P1 5
P2 6
21 26 SEE NOTE 10
21 26 SEE NOTE 10
19 SEE NOTES 8 & 9 MARK: W138-P1 (J26-GDB)
19 SEE NOTES 8 & 9 MARK: W138-P2 (J3-SCM BOX)
E4 23 24 SEE NOTES 4 & 16

6900043-031	6900043-031
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .50
3 PLACE DECIMALS ± –
ANGLES ± –
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Janowiak DATE 13 APR 66
CHECKED 25 APR 66
APPROVAL J. M. Watson 5-5-66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 5-12-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, W138

SIZE C
CODE IDENT NO. 99974
6900134
SCALE —
SHEET 14 OF 14

MIL-1088D D

APPLICATION	
NEXT ASSY	USED ON
6900088-011	6900088-011

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	REVISED PER MXC 210751	7 APR 66	W.S.
B	REVISED PER MXC 210877	18 APR 66	M.G.
C	REVISED PER MXC 211824	28 APR 66	JJJ RWH
D	INITIAL RELEASE CLASS A PER TDRR 28598	2 MAY 66	JHP EF

Charleston 25FEB66

REV									
SHEET									
REV STATUS OF SHEETS	REV	D	D	D	D	D	D	D
	SHEET	1	2	3	4	5	6	7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY
DO 61639

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN E. Miller 22 FEB 66 (DAY MO YR)
CHECKER Ed Foster 25 Feb 66
ENGINEER Mattox 28 Feb 66
APPROVAL Bruce 5/5/66
CONTR NO. NAS9-497
NASA APPROVAL 5/4/66
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

LEAD SET A-A

SIZE	CODE IDENT. NO	
A	99974	6900138
SCALE NONE		SHEET 1 O 7

MIL 1377A6 12-65

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOTE ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
4	APPLY LEAD IDENTIFICATIONS PER ND1002019 AT CENTER-TO-CENTER INTERVALS OF 1.2 INCHES.
5	SOLDER PER ND1002071 USING ITEM 3 OR ITEMS 4 AND 5.
6	SPIRALLING OF LEAD IDENTIFICATION IS ALLOWED.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900138
SCALE-NONE	REV LTR D	SHEET 2 OF 7

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900138-001	WIRE, ND1002181, TYPE I, CLASS I, 24AWG, WHITE, TOTAL LENGTH
3	2	~~94~~ 31	1015864-109	INSULATION SLEEVING, ELECTRICAL
	3	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
	4	AR	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
	5	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)

SIZE	CODE IDENT NO.	
A	99974	6900138
SCALE-NONE	REV LTR D	SHEET 3 OF 7

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
AA 1	1		A21K1-1 A21-1					.25 .25	YES YES		2	
AA 2	1		A21K1-5 A21-2					.25 .25	YES YES		2	
AA 3	1		A21K1-8 A21K2-2					.25 .25	YES YES		2 2	
AA 4	1		A21K2-1 A21-3					.25 .25	YES YES		2	
AA 5	1		A21K2-5 A21-4					.25 .25	YES YES		2	
AA 6	1		A21K2-8 A21K3-2					.25 .25	YES YES		2 2	
AA 7	1		A21K3-1 A21-5					.25 .25	YES YES		2	
AA 8	1		A21K3-5 A21-6					.25 .25	YES YES		2	
AA 9	1		A24K1-1 A24-1					.25 .25	YES YES		2	
AA 10	1		A24K1-5 A24-2					.25 .25	YES YES		2	
AA 11	~~1~~		~~A22K1-8~~ DELETED ~~A22K1-1~~					~~.25~~ ~~.25~~	~~YES~~ ~~YES~~		~~2~~ ~~2~~	
AA 12	1		A22-1 A22K1-1					.25 .25	YES YES		 2	

SIZE	CODE IDENT NO.	
A	99974	6900138
SCALE-NONE	REV LTR D	SHEET 4 OF 7

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
AA 13	1		A22-3 ~~A22K1-8~~ A22K1-1					.25 .25	YES YES		 ~~2~~	
AA 14	1		A22-5 A22K2-1					.25 .25	YES YES		 2	
AA 15	1		A22K1-5 A22-2					.25 .25	YES YES		2	
AA 16	1		A22K2-1 A22-3					.25 .25	YES YES		2	
AA 17	1		A22K2-5 A22-4					.25 .25	YES YES		2	
AA 18	1		A22K1-5 A22-4					.25 .25	YES YES		2	
AA 19	1		A22K2-7 A22K2-3					.25 .25	YES YES		2 2	
AA 20	1		A22-6 A22K3-5					.25 .25	YES YES		 2	
AA 21	1		A22-6 A22K2-5					.25 .25	YES YES		 2	
AA 22	1		A22K3-1 A22-5					.25 .25	YES YES		2	
AA 23	1		A23K2-8 A23K1-8					.25 .25	YES YES		2 2	
AA 24	1		A23K1-1 A23-1					.25 .25	YES YES		2	

SIZE	CODE IDENT NO.	
A	99974	6900138
SCALE-NONE	REV LTR D	SHEET 5 OF 7

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
AA 25	1		A23K1-5 A23-2					.25 .25	YES YES		2	
AA 26	1		A23K2-1 A23-3					.25 .25	YES YES		2	
AA 27	1		A23K2-5 A23-4					.25 .25	YES YES		2	
AA 28	1		A23K3-1 A23-5					.25 .25	YES YES		2	
AA 29	1		A23K3-5 A23-6					.25 .25	YES YES		2	
AA 30	1		A9-13 A9-38					.25 .25	YES YES			
AA 31	1		A8-13 A8-38					.25 .25	YES YES			
AA 32	1		A7-13 A7-38					.25 .25	YES YES			
AA 33	1		A6-13 A6-38					.25 .25	YES YES			
AA 34	1		A5-13 A5-38					.25 .25	YES YES			
AA 35	1		A4-13 A4-38					.25 .25	YES YES			
AA 36	1		A3-13 A3-38					.25 .25	YES YES			

SIZE	CODE IDENT NO.	
A	99974	6900138
SCALE-NONE	REV LTR D	SHEET 6 OF 7

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
AA 37	1		A2-13 A2-38					.25 .25	YES YES			
AA 38	1		A7-15 A7-31					.25 .25	YES YES			
AA 39	1		A18-4 A18-8					.25 .25	YES YES			

SIZE	CODE IDENT NO.	
A	99974	6900138
SCALE-NONE	REV LTR D	SHEET 7 OF 7

APPLICATION	
NEXT ASSY	USED ON
6900077-011	6900077-011

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	INITIAL RELEASE CLASS A PER TDRR 28601	3-MAY-66	B EF

REV														
SHEET														
REV STATUS	REV	A	A	A	A	A	A	A	A	A	A	A	A	A
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN DATE 10 MAR 66
CHECKED 14 MAR 66
APPROVAL 14 MAR 66
APPROVAL 5/3/66
NASA APPROVAL
MIT APPROVAL 5-6-66
CONTRACT NAS9-497

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, W560

CODE IDENT NO.	SIZE		REV
99974	A	6900140	A

SCALE —
SHEET 1 OF 13

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOTE ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
4	ASSEMBLE PER ND 1002032
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 11.
7	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
8	FILL THE SPACE BETWEEN WIRE BUNDLE AND GRUMMET USING ITEM 10 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
9	SERIALIZE PER ND 1002032
10	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED, .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
11	AT ASSEMBLY OF ITEM 5 TO ITEM 9, REMOVE 4 SELFLOCKING NUTS SECURING LOCATING PINS TO ITEM 5 AND DISCARD. ATTACH ITEM 5 TO ITEM 9 USING LOCATING PINS.

NOTE NUMBER — GENERAL NOTES — DESCRIPTION

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900140-001	WIRE ND1002181 TYPE 1 CLASS 1, 22 AWG WHT, 340 FT TOTAL LENGTH
	2	1	6900140-002	ZIPPER TUBING PER ND1002155 TYPE 1 GREY, 2 IN DIA, 4 FT TOTAL LENGTH
5	3	3	1016128-021	BAND IDENTIFICATION
5	4	85	1016369-421	CONTACT, SOCKET
5	5	1	1897336-001	CONNECTOR
5	6	1	1897247-002	CONNECTOR
5	7	X	1897190- 2	CONTACT, SOCKET (FURNISHED WITH ITEM 6)
5	8	1	1010933-105	CLAMP, STRAIN RELIEF
5	9	1	1897391	CLAMP, CABLE DOUBLE ENTRY
	10	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	11	AR	MIL-I-7138 TYPE P, CLASS 2, BLACK	LACING TAPE

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1		P1-1 P2-A3				.15 .19	NO NO		7 4	
A	2	1		P1-2 P2-A4				.15 .19	NO NO		7 4	
A	3	1		P1-3 P2-A5				.15 .19	NO NO		7 4	
A	4	1		P1-4 P2-A6				.15 .19	NO NO		7 4	
A	5	1		P1-5 P2-B1				.15 .19	NO NO		7 4	
A	6	1		P1-6 P2-B2				.15 .19	NO NO		7 4	
A	7	1		P1-7 P2-B3				.15 .19	NO NO		7 4	
A	8	1		P1-8 P2-B4				.15 .19	NO NO		7 4	
A	9	1		P1-9 P2-B5				.15 .19	NO NO		7 4	
A	10	1		P1-10 P2-B6				.15 .19	NO NO		7 4	
A	11	1		P1-11 P2-B7				.15 .19	NO NO		7 4	
A	12	1		P1-12 P2-B8				.15 .19	NO NO		7 4	

CABLE ASSEMBLY W560 6900140 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		P1-13 P2-C1					.15 .19	NO NO		7 4	
A 14	1		P1-14 P2-C2					.15 .19	NO NO		7 4	
A 15	1		P1-15 P2-C3					.15 .19	NO NO		7 4	
A 16	1		P1-16 P2-C4					.15 .19	NO NO		7 4	
A 17	1		P1-17 P2-C5					.15 .19	NO NO		7 4	
A 18	1		P1-18 P2-C6					.15 .19	NO NO		7 4	
A 19	1		P1-19 P2-C7					.15 .19	NO NO		7 4	
A 20	1		P1-20 P2-C8					.15 .19	NO NO		7 4	
A 21	1		P1-21 P2-D1					.15 .19	NO NO		7 4	
A 22	1		P1-22 P2-D2					.15 .19	NO NO		7 4	
A 23	1		P1-23 P2-D3					.15 .19	NO NO		7 4	
A 24	1		P1-24 P2-D4					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900140

SCALE-NONE | REV LTR A | SHEET 6 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W560 6900140 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		P1-25 P2-D5					.15 .19	NO NO		7 4	
A 26	1		P1-26 P2-D6					.15 .19	NO NO		7 4	
A 27	1		P1-27 P2-D7					.15 .19	NO NO		7 4	
A 28	1		P1-28 P2-D8					.15 .19	NO NO		7 4	
A 29	1		P1-29 P2-E1					.15 .19	NO NO		7 4	
A 30	1		P1-30 P2-E2					.15 .19	NO NO		7 4	
A 31	1		P1-31 P2-E3					.15 .19	NO NO		7 4	
A 32	1		P1-32 P2-E4					.15 .19	NO NO		7 4	
A 33	1		P1-33 P2-E5					.15 .19	NO NO		7 4	
A 34	1		P1-34 P2-E6					.15 .19	NO NO		7 4	
A 35	1		P1-35 P2-E7					.15 .19	NO NO		7 4	
A 36	1		P1-36 P2-E8					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900140

SCALE-NONE | REV LTR A | SHEET 7 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W560 6900140 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		P1-37 P2-F1					.15 .19	NO NO		7 4	
A 38	1		P1-38 P2-F2					.15 .19	NO NO		7 4	
A 39	1		P1-39 P2-F3					.15 .19	NO NO		7 4	
A 40	1		P1-40 P2-F4					.15 .19	NO NO		7 4	
A 41	1		P1-41 P2-F5					.15 .19	NO NO		7 4	
A 42	1		P1-42 P2-F6					.15 .19	NO NO		7 4	
A 43	1		P1-43 P2-F7					.15 .19	NO NO		7 4	
A 44	1		P1-44 P2-F8					.15 .19	NO NO		7 4	
A 45	1		P1-45 P2-G1					.15 .19	NO NO		7 4	
A 46	1		P1-46 P2-G2					.15 .19	NO NO		7 4	
A 47	1		P1-47 P2-G3					.15 .19	NO NO		7 4	
A 48	1		P1-48 P2-G4					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900140

SCALE-NONE | REV LTR A | SHEET 8 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W560 6900140 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		P1-49 P2-G5					.15 .19	NO NO		7 4	
A 50	1		P1-50 P2-G6					.15 .19	NO NO		7 4	
A 51	1		P1-51 P2-G7					.15 .19	NO NO		7 4	
A 52	1		P1-52 P2-G8					.15 .19	NO NO		7 4	
A 53	1		P1-53 P2-H1					.15 .19	NO NO		7 4	
A 54	1		P1-54 P2-H2					.15 .19	NO NO		7 4	
A 55	1		P1-55 P2-H3					.15 .19	NO NO		7 4	
A 56	1		P1-56 P2-H4					.15 .19	NO NO		7 4	
A 57	1		P1-57 P2-H5					.15 .19	NO NO		7 4	
A 58	1		P1-58 P2-H6					.15 .19	NO NO		7 4	
A 59	1		P1-59 P2-H7					.15 .19	NO NO		7 4	
A 60	1		P1-60 P2-H8					.15 .19	NO NO		7 4	

SIZE A | CODE IDENT NO. 99974 | 6900140

SCALE-NONE | REV LTR A | SHEET 9 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W560 6900140 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1		P1-61 P2-J1					.15 .19	NO NO		7 4	
A 62	1		P1-62 P2-J2					.15 .19	NO NO		7 4	
A 63	1		P1-63 P2-J3					.15 .19	NO NO		7 4	
A 64	1		P1-64 P2-J4					.15 .19	NO NO		7 4	
A 65	1		P1-65 P2-J5					.15 .19	NO NO		7 4	
A 66	1		P1-66 P2-J6					.15 .19	NO NO		7 4	
A 67	1		P1-67 P2-J7					.15 .19	NO NO		7 4	
A 68	1		P1-68 P2-J8					.15 .19	NO NO		7 4	
A 69	1		P1-69 P2-K1					.15 .19	NO NO		7 4	
A 70	1		P1-70 P2-K2					.15 .19	NO NO		7 4	
A 71	1		P1-71 P2-K3					.15 .19	NO NO		7 4	
A 72	1		P1-72 P2-K6					.15 .19	NO NO		7 4	

SIZE A	CODE IDENT NO. 99974	6900140
SCALE-NONE	REV LTR A	SHEET 10 OF 13

CABLE ASSEMBLY W560 6900140 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1		P1-73 P2-K7					.15 .19	NO NO		7 4	
A 74	1		P1-74 P2-K8					.15 .19	NO NO		7 4	
A 75	1		P1-75 P2-L1					.15 .19	NO NO		7 4	
A 76	1		P1-76 P2-L2					.15 .19	NO NO		7 4	
A 77	1		P1-77 P2-L7					.15 .19	NO NO		7 4	
A 78	1		P1-78 P2-L8					.15 .19	NO NO		7 4	
A 79	1		P1-79 P2-M1					.15 .19	NO NO		7 4	
A 80	1		P1-80 P2-M2					.15 .19	NO NO		7 4	
A 81	1		P1-81 P2-M3					.15 .19	NO NO		7 4	
A 82	1		P1-82 P2-M6					.15 .19	NO NO		7 4	
A 83	1		P1-83 P2-M7					.15 .19	NO NO		7 4	
A 84	1		P1-84 P2-M8					.15 .19	NO NO		7 4	

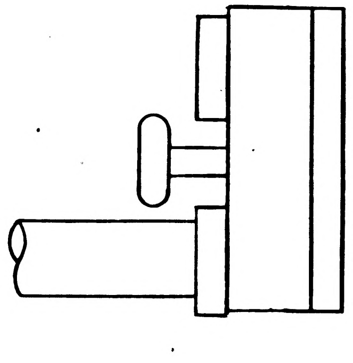
SIZE A	CODE IDENT NO. 99974	6900140
SCALE-NONE	REV LTR A	SHEET 11 OF 13

CABLE ASSEMBLY W560 6900140 A

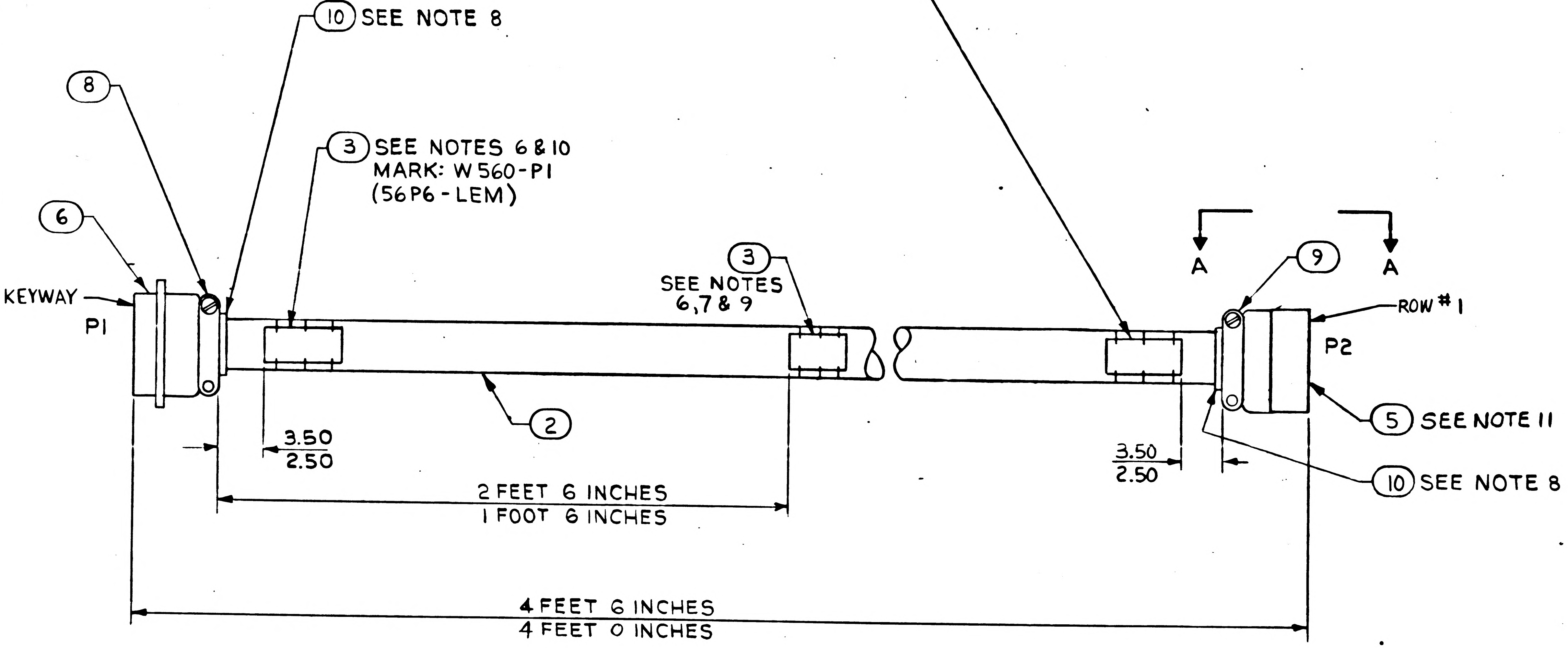
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 85	1		P1-85 P2-N1					.15 .19	NO NO		7 4	

SIZE A	CODE IDENT NO. 99974	6900140
SCALE-NONE	REV LTR A	SHEET 12 OF 13

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
		REVISIONS TDRR 28601			
		SEE SHEET ONE FOR REVISION RECORD			



PARTIAL VIEW A-A


10 SEE NOTE 8
8
3 SEE NOTES 6 & 10
MARK: W560-P1
(56P6-LEM)
6
KEYWAY
P1
3
SEE NOTES
6,7 & 9
2
3.50
2.50
2 FEET 6 INCHES
1 FOOT 6 INCHES
4 FEET 6 INCHES
4 FEET 0 INCHES
3 SEE NOTES 6 & 10
MARK: W560-P2
(BB-J1/J3)
A
A
9
ROW # 1
P2
5 SEE NOTE 11
3.50
2.50
10 SEE NOTE 8

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± —
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL ——
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN 11MAR66 DATE
CHECKED 14 MAR 66
APPROVAL 5/3/66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 5-10-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, W560

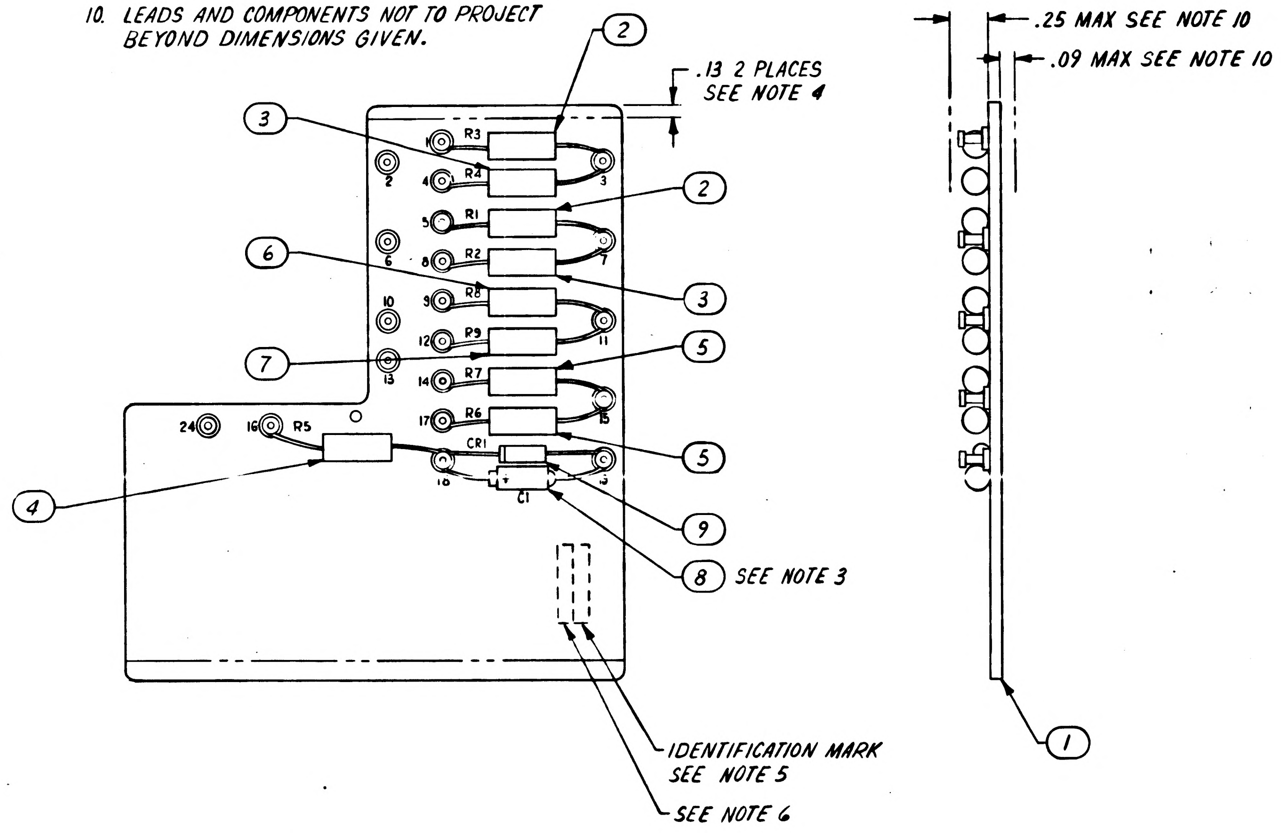
SIZE C
CODE IDENT NO. 99974
6900140
SCALE NONE
SHEET 13 OF 13

MIL-1082D D

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	A	INITIAL RELEASE CLASS A PER TDRR 28578		2 MAY 66	RP

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. SOLDER PER MIL-S-6872 (ES2505-1) USING ITEMS ⑪ AND ⑫ OR ⑬.
3. BOND ITEM ⑧ AND LEADS 1 INCH OR LONGER TO ITEM ① PER ND1002203.
4. AREAS TO BE FREE OF LEADS, COMPONENTS AND BONDING MATERIAL.
5. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES267).
6. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .09 HIGH, COLOR BLACK.
7. SERIALIZE PER ND1002023.
8. VENDOR ITEM - SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
9. ELECTRICAL CONTINUITY TO BE CHECKED PER SCHEMATIC DIAGRAM.
10. LEADS AND COMPONENTS NOT TO PROJECT BEYOND DIMENSIONS GIVEN.



SEE NOTE 8

					ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		14	6900107	SCHEMATIC DIAGRAM, ELEC.
			AR		13	SN60 WRAP	SOLDER QQ-S-571 (ES2175-3)
			AR		12	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
			AR		11	SN60 WS	SOLDER QQ-S-571 (ES2175-1)
			1		10	6900106	LEAD SET AA
			1		9	1015941-19	SEMICONDUCTOR DEVICE, DIODE
			1		8	CS13BF105K	(1896954-126) CAPACITOR MIL-C-26655/2
			1		7	RN60D2002F	(1896915-414) RESISTOR MIL-R-10509/1
			1		6	RN60D6342F	(-462)
			2		5	RN60D2491F	(-327)
			1		4	RN60D5491F	(1896915-360)
			2		3	RN60C2262C	(1896984-674)
			2		2	RN60C9312C	(1896984-792) RESISTOR MIL-R-10509/1
			1		1	6900104	TERMINAL BOARD (INSEP ASSY)
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900088-011	6900088-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS.
DRAWN Kilinger DATE 7 FEB 66
CHECKED C. Pujda 17 Feb 66
APPROVAL Feldmann
CONTRACT NAS 9 497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ATTENUATOR CIRCUIT
BOARD ASSEMBLY

SIZE D
CODE IDENT NO. 99974
6900141
SCALE 2:1
SHEET 1 OF 1

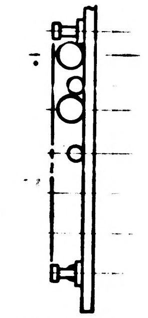
MIL-10550 D

6900141

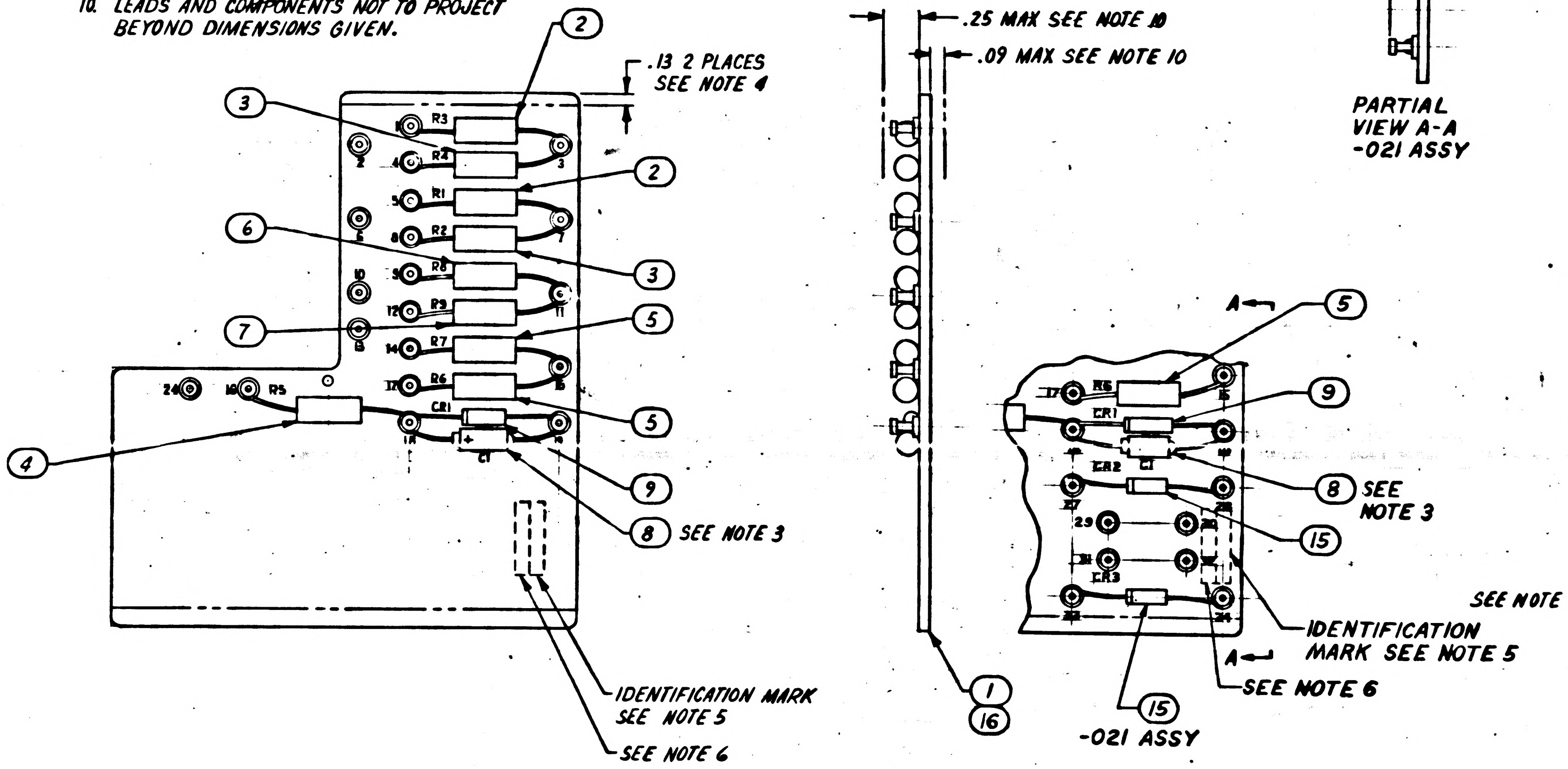
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. SOLDER PER MIL-S-6872 (ES2505-1) USING ITEMS ⑪ AND ⑫ OR ⑬.
3. BOND ITEM ⑧ AND LEADS 1 INCH OR LONGER TO ITEMS ① OR ⑯ PER ND1002203.
4. AREAS TO BE FREE OF LEADS, COMPONENTS AND BONDING MATERIAL.
5. IDENTIFY USING DRAWING NUMBER PREFIXED BY "ASSY" WITH APPLICABLE DASH NUMBER PER MIL-STD-130 (ES267).
6. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .09 HIGH, COLOR BLACK.
7. SERIALIZE PER ND1002023.
8. VENDOR ITEM - SEE SPECIFICATION OR SOURCE CONTROL DRAWING.
9. ELECTRICAL CONTINUITY TO BE CHECKED PER SCHEMATIC DIAGRAM.
10. LEADS AND COMPONENTS NOT TO PROJECT BEYOND DIMENSIONS GIVEN.

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
Ⓜ	A	INITIAL RELEASE CLASS A PER TDRR 28598		2 MAY 66	RP EF
	B	REVISED PER TDRR 34415		30 AUG 67	B.



PARTIAL VIEW A-A -021 ASSY



SEE NOTE 8

		☒	—		17	6800158	SCHEMATIC DIAGRAM, ELEC
		~~1~~	~~—~~		~~16~~	~~6900154~~	~~TERMINAL BOARD (INSEP ASSY)~~
		2	—		15	1896966-044	(IN914) SEMICONDUCTOR DEVICE
		—	☒	✓	14	6900107	SCHEMATIC DIAGRAM, ELEC.
		AR	AR		13	SN60 WRAP	SOLDER QQ-S-571 (ES2175-3)
		AR	AR		12	MIL-F-14256 TYPE A OR W	FLUX (ES2798)
		AR	AR		11	SN60 WS	SOLDER QQ-S-571 (ES2175-1)
		1	1	✓	10	6900106	LEAD SET AA
		1	1	✓	9	1015941-19	SEMICONDUCTOR DEVICE, DIODE
		1	1		8	CS13BF105K	(1896954-126) CAPACITOR MIL-C-26655/2
		1	1		7	RN60D2002F	(1896915-414) RESISTOR MIL-R-10509/1
		1	1		6	RN60D6342F	(-462)
		2	2		5	RN60D2491F	(-327)
		1	1		4	RN60D5491F	(1896915-360)
		2	2		3	RN60C2262C	(1896984-674)
		2	2		2	RN60C9312C	(1896984-792) RESISTOR MIL-R-10509/1
		—	1	✓	1	6900104	TERMINAL BOARD (INSEP ASSY)
		—	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
6900088-031	6900088-031	-021
6900088-021	6900088-021	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± —
ANGLES ± —

DO NOT SCALE THIS DRAWING

MATERIAL —

APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN J. Kilvinger DATE 7 FEB 66
CHECKED C. Pujda 17 Feb 66
APPROVAL L. Gilman 5/4/66
CONTRACT NAS9 497
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ATTENUATOR CIRCUIT BOARD ASSEMBLY

SIZE D
CODE IDENT NO. 99974
6900141
SCALE 2:1
SHEET 1 OF 1

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900077-011	6900077-011	A	INITIAL RELEASE CLASS A PER TDRR 28601	3 MAY 66	PG EF

REV STATUS OF SHEETS	REV	A	A	A	A	A	A	A	A	A	A	A	A	A
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 10 MAR DATE 66
CHECKED 14 MAR 66
APPROVAL 14 MAR 66
APPROVAL 5/3/66

NASA APPROVAL
MIT APPROVAL 9-10-66

CONTRACT NAS9-497

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL W561

CODE IDENT NO. 99974
SIZE A
6900142
REV A
SCALE —
SHEET 1 OF 13

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
1	NOTE ONE IS NOT APPLICABLE
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	APPLY LEAD IDENTIFICATIONS PER ND 1002019.
4	ASSEMBLE PER ND 1002032
5	VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.
6	FASTEN MARKER SECURELY TO CONFORM TO CONFIGURATION USING ITEM 11.
7	IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.
	FILL THE SPACE BETWEEN WIRE BUNDLE AND GROMMET USING ITEM 10 TO SECURE WIRE BUNDLE IN THE STRAIN RELIEF CLAMP.
9	SERIALIZE PER ND 1002032
10	MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS NOTED, .12 INCH HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
11	AT ASSEMBLY OF ITEM 5 TO ITEM 9, REMOVE 4 SELFLOCKING NUTS SECURING LOCATING PINS TO ITEM 5 AND DISCARD. ATTACH ITEM 5 TO ITEM 9 USING LOCATING PINS.

SIZE	CODE IDENT NO.	
A	99974	6900142
SCALE-NONE	REV LTR A	SHEET 2 OF 13

GENERAL NOTES

NOTE NUMBER DESCRIPTION

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE	CODE IDENT NO.	
A	99974	6900142
SCALE-NONE	REV LTR A	SHEET 3 OF 13

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	6900142-001	WIRE ND1002181 TYPE 1 CLASS 1, 22 AWG WHT, 340 FT TOTAL LENGTH
	2	1	6900142-002	ZIPPER TUBING PER ND1002155 TYPE 1 GREY, 2 IN DIA, 4 FT TOTAL LENGTH
5	3	3	1016128-021	BAND IDENTIFICATION
5	4	85	1016369-421	CONTACT, SOCKET
5	5	1	1897336-001	CONNECTOR
5	6	1	1897247-003	CONNECTOR
5	7	X	1897190- 2	CONTACT, SOCKET (FURNISHED WITH ITEM 6)
5	8	1	1010933-105	CLAMP, STRAIN RELIEF
5	9	1	1897391	CLAMP, CABLE DOUBLE ENTRY
	10	AR	MIL-I-631 TYPE F FORM T BLACK GRADE A CLASS 1	FILLER TAPE .62 WIDE, .020 THICK
	11	AR	MIL-I-7138 TYPE P, CLASS 2, BLACK	LACING TAPE

SIZE	CODE IDENT NO.	
A	99974	6900142
SCALE-NONE	REV LTR A	SHEET 4 OF 13

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	1	1	P1-1 P2-A3					.15 .19	NO NO		7 4	
A	2	1	P1-2 P2-A4					.15 .19	NO NO		7 4	
A	3	1	P1-3 P2-A5					.15 .19	NO NO		7 4	
A	4	1	P1-4 P2-A6					.15 .19	NO NO		7 4	
A	5	1	P1-5 P2-B1					.15 .19	NO NO		7 4	
A	6	1	P1-6 P2-B2					.15 .19	NO NO		7 4	
A	7	1	P1-7 P2-B3					.15 .19	NO NO		7 4	
A	8	1	P1-8 P2-B4					.15 .19	NO NO		7 4	
A	9	1	P1-9 P2-B5					.15 .19	NO NO		7 4	
A	10	1	P1-10 P2-B6					.15 .19	NO NO		7 4	
A	11	1	P1-11 P2-B7					.15 .19	NO NO		7 4	
A	12	1	P1-12 P2-B8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.	
A	99974	6900142
SCALE-NONE	REV LTR A	SHEET 5 OF 13

CABLE ASSEMBLY W561 6900142 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	1		P1-13 P2-C1					.15 .19	NO NO		7 4	
A 14	1		P1-14 P2-C2					.15 .19	NO NO		7 4	
A 15	1		P1-15 P2-C3					.15 .19	NO NO		7 4	
A 16	1		P1-16 P2-C4					.15 .19	NO NO		7 4	
A 17	1		P1-17 P2-C5					.15 .19	NO NO		7 4	
A 18	1		P1-18 P2-C6					.15 .19	NO NO		7 4	
A 19	1		P1-19 P2-C7					.15 .19	NO NO		7 4	
A 20	1		P1-20 P2-C8					.15 .19	NO NO		7 4	
A 21	1		P1-21 P2-D1					.15 .19	NO NO		7 4	
A 22	1		P1-22 P2-D2					.15 .19	NO NO		7 4	
A 23	1		P1-23 P2-D3					.15 .19	NO NO		7 4	
A 24	1		P1-24 P2-D4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.		
A	99974	6900142	
SCALE-NONE	REV LTR A	SHEET 6 OF 13	

MIL 2084 9-65

CABLE ASSEMBLY W561 6900142 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1		P1-25 P2-D5					.15 .19	NO NO		7 4	
A 26	1		P1-26 P2-D6					.15 .19	NO NO		7 4	
A 27	1		P1-27 P2-D7					.15 .19	NO NO		7 4	
A 28	1		P1-28 P2-D8					.15 .19	NO NO		7 4	
A 29	1		P1-29 P2-E1					.15 .19	NO NO		7 4	
A 30	1		P1-30 P2-E2					.15 .19	NO NO		7 4	
A 31	1		P1-31 P2-E3					.15 .19	NO NO		7 4	
A 32	1		P1-32 P2-E4					.15 .19	NO NO		7 4	
A 33	1		P1-33 P2-E5					.15 .19	NO NO		7 4	
A 34	1		P1-34 P2-E6					.15 .19	NO NO		7 4	
A 35	1		P1-35 P2-E7					.15 .19	NO NO		7 4	
A 36	1		P1-36 P2-E8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.		
A	99974	6900142	
SCALE-NONE	REV LTR A	SHEET 7 OF 13	

MIL 2084 9-65

CABLE ASSEMBLY W561 6900142 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1		P1-37 P2-F1					.15 .19	NO NO		7 4	
A 38	1		P1-38 P2-F2					.15 .19	NO NO		7 4	
A 39	1		P1-39 P2-F3					.15 .19	NO NO		7 4	
A 40	1		P1-40 P2-F4					.15 .19	NO NO		7 4	
A 41	1		P1-41 P2-F5					.15 .19	NO NO		7 4	
A 42	1		P1-42 P2-F6					.15 .19	NO NO		7 4	
A 43	1		P1-43 P2-F7					.15 .19	NO NO		7 4	
A 44	1		P1-44 P2-F8					.15 .19	NO NO		7 4	
A 45	1		P1-45 P2-G1					.15 .19	NO NO		7 4	
A 46	1		P1-46 P2-G2					.15 .19	NO NO		7 4	
A 47	1		P1-47 P2-G3					.15 .19	NO NO		7 4	
A 48	1		P1-48 P2-G4					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.		
A	99974	6900142	
SCALE-NONE	REV LTR A	SHEET 8 OF 13	

MIL 2084 9-65

CABLE ASSEMBLY W561 6900142 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1		P1-49 P2-G5					.15 .19	NO NO		7 4	
A 50	1		P1-50 P2-G6					.15 .19	NO NO		7 4	
A 51	1		P1-51 P2-G7					.15 .19	NO NO		7 4	
A 52	1		P1-52 P2-G8					.15 .19	NO NO		7 4	
A 53	1		P1-53 P2-H1					.15 .19	NO NO		7 4	
A 54	1		P1-54 P2-H2					.15 .19	NO NO		7 4	
A 55	1		P1-55 P2-H3					.15 .19	NO NO		7 4	
A 56	1		P1-56 P2-H4					.15 .19	NO NO		7 4	
A 57	1		P1-57 P2-H5					.15 .19	NO NO		7 4	
A 58	1		P1-58 P2-H6					.15 .19	NO NO		7 4	
A 59	1		P1-59 P2-H7					.15 .19	NO NO		7 4	
A 60	1		P1-60 P2-H8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.		
A	99974	6900142	
SCALE-NONE	REV LTR A	SHEET 9 OF 13	

MIL 2084 9-65

CABLE ASSEMBLY W561 6900142 A

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG.	ACCESSORY ITEMS	REMARKS
A	61	1		P1-61 P2-J1					.15 .19	NO NO		7 4	
A	62	1		P1-62 P2-J2					.15 .19	NO NO		7 4	
A	63	1		P1-63 P2-J3					.15 .19	NO NO		7 4	
A	64	1		P1-64 P2-J4					.15 .19	NO NO		7 4	
A	65	1		P1-65 P2-J5					.15 .19	NO NO		7 4	
A	66	1		P1-66 P2-J6					.15 .19	NO NO		7 4	
A	67	1		P1-67 P2-J7					.15 .19	NO NO		7 4	
A	68	1		P1-68 P2-J8					.15 .19	NO NO		7 4	
A	69	1		P1-69 P2-K1					.15 .19	NO NO		7 4	
A	70	1		P1-70 P2-K2					.15 .19	NO NO		7 4	
A	71	1		P1-71 P2-K3					.15 .19	NO NO		7 4	
A	72	1		P1-72 P2-K6					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.		
A	99974	6900142	
SCALE-NONE	REV LTR	A	SHEET 10 OF 13

MIL 2084 9-65

CABLE ASSEMBLY W561 6900142 A

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	73	1		P1-73 P2-K7					.15 .19	NO NO		7 4	
A	74	1		P1-74 P2-K8					.15 .19	NO NO		7 4	
A	75	1		P1-75 P2-L1					.15 .19	NO NO		7 4	
A	76	1		P1-76 P2-L2					.15 .19	NO NO		7 4	
A	77	1		P1-77 P2-L7					.15 .19	NO NO		7 4	
A	78	1		P1-78 P2-L8					.15 .19	NO NO		7 4	
A	79	1		P1-79 P2-M1					.15 .19	NO NO		7 4	
A	80	1		P1-80 P2-M2					.15 .19	NO NO		7 4	
A	81	1		P1-81 P2-M3					.15 .19	NO NO		7 4	
A	82	1		P1-82 P2-M6					.15 .19	NO NO		7 4	
A	83	1		P1-83 P2-M7					.15 .19	NO NO		7 4	
A	84	1		P1-84 P2-M8					.15 .19	NO NO		7 4	

SIZE	CODE IDENT NO.		
A	99974	6900142	
SCALE-NONE	REV LTR	A	SHEET 11 OF 13

MIL 2084 9-65

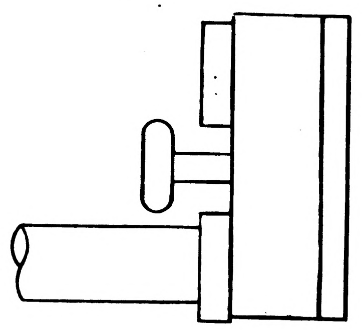
CABLE ASSEMBLY W561 6900142 A

LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	85	1		P1-85 P2-N1					.15 .19	NO NO		7 4	

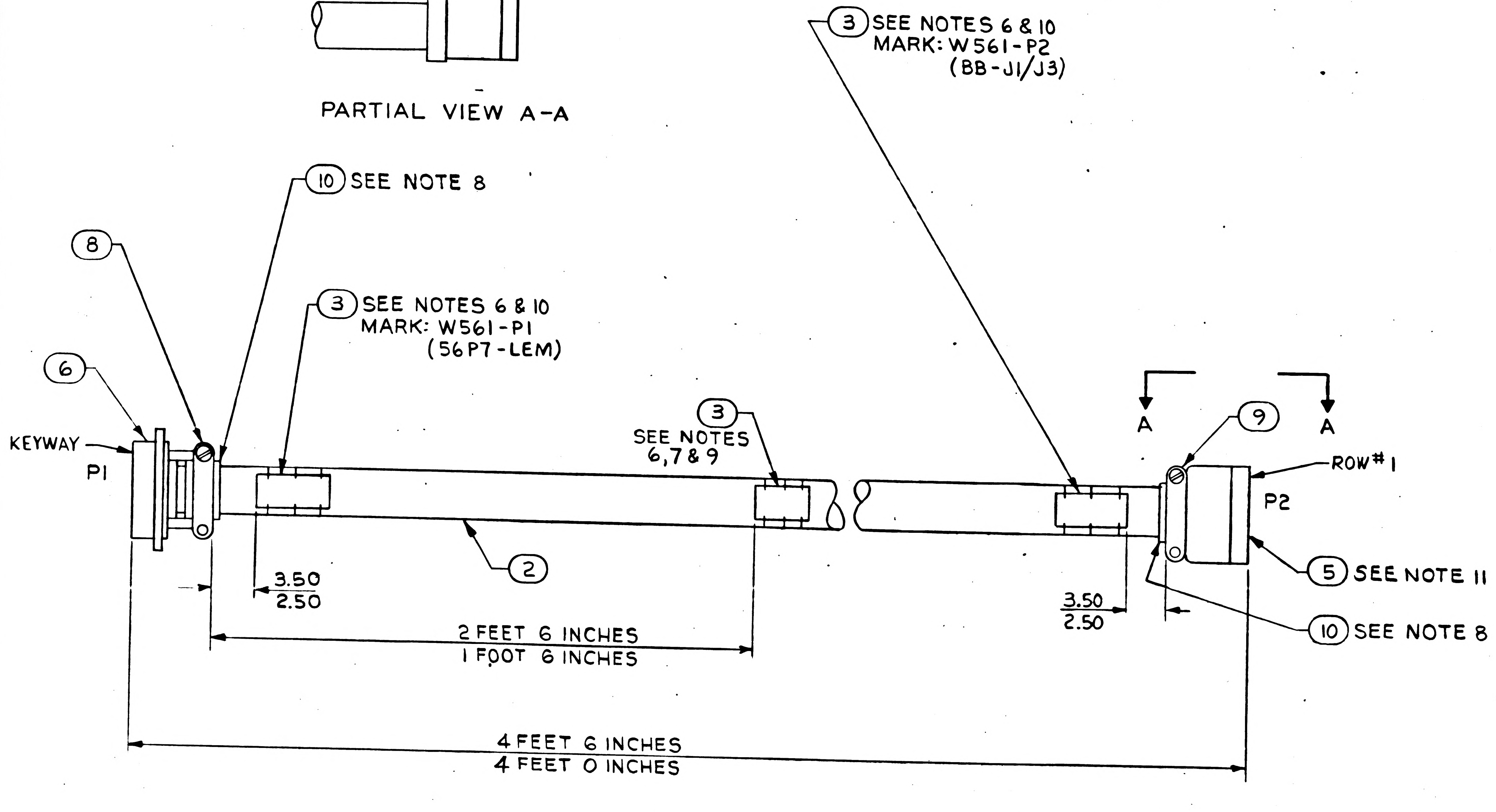
SIZE	CODE IDENT NO.		
A	99974	6900142	
SCALE-NONE	REV LTR	A	SHEET 12 OF 13

MIL 2084 9-65

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
		REVISIONS TDRR 28601			
		SEE SHEET 1 FOR REVISION RECORD			



PARTIAL VIEW A-A



3 SEE NOTES 6 & 10
MARK: W561-P2
(BB-J1/J3)
10 SEE NOTE 8
8
3 SEE NOTES 6 & 10
MARK: W561-P1
(56P7-LEM)
6
KEYWAY
P1
3
SEE NOTES
6,7 & 9
A
9
A
ROW # 1
P2
2
5 SEE NOTE 11
3.50
2.50
3.50
2.50
10 SEE NOTE 8
2 FEET 6 INCHES
1 FOOT 6 INCHES
4 FEET 6 INCHES
4 FEET 0 INCHES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± —
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Fricke DATE 4 MAR 66
CHECKED [illegible] 14 MAR 66
APPROVAL [illegible] 5/3/66
CONTRACT
NASA APPROVAL
MIT APPROVAL [illegible] 5-10-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, W561

SIZE C
CODE IDENT NO. 99974
6900142
SCALE NONE
SHEET 13 OF 13

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
6900043-031	6900043-031	A	INITIAL RELEASE CLASS A PER TDRR 28759	4 May 66	E.L. CP

REV	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SHEET	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
REV STATUS	REV								A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
OF SHEETS	SHEET								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN C. Litzow DATE 21 MAR 1966
CHECKED W. Diehl 30 MAR 66
APPROVAL C. W. Wise 31 MAR 66
APPROVAL J. M. Watson 5-5-66

CABLE ASSEMBLY,
SPECIAL PURPOSE,
ELECTRICAL, BRANCHED-
W133

NASA APPROVAL
MIT APPROVAL 5-12-66
CONTRACT NAS9-497

CODE IDENT NO.	SIZE		REV
99974	A	6900143	A
SCALE ——		SHEET 1 OF 71	

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
15	A														
16	A														
17	A														
18	A														
19	A														
50	A														
51	A														
52	A														
53	A														
54	A														
55	A														
56	A														
57	A														
58	A														
59	A														
60	A														
61	A														
62	A														
63	A														
64	A														
65	A														
66	A														
67	A														
68	A														
69	A														
70	A														
71	A														

	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	REVISION A	NASA DRAWING NO. **6900143** SHEET 2 OF 71

NOTE NUMBER GENERAL NOTES DESCRIPTION

1 SHIELD TERMINATION FIGURES ARE PER-
A - ND1002071
B - ND1002032

2 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

3 APPLY LEAD IDENTIFICATIONS PER ND 1002019. OMIT ALL SUFFIX LETTERS EXCEPT A AND B.

4 LACE HARNESS USING ITEM 26.

5 APPLY REFERENCE DESIGNATIONS TO SLEEVES PER ND 1002019.

6 APPLY LEAD IDENTIFICATIONS PER ND 1002019.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 VENDOR ITEM - SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

9 POSITION IDENTIFICATION SLEEVE ADJACENT TO SOLDER SLEEVE

10 THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR OR MARKED LETTER.
A - FROM END SHIELD
B - TO END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER.
W - WHITE
Y - WHITE WITH YELLOW TRACER.

11 IDENTIFY PER MIL-STD-130 (ES267) USING PART NUMBER.

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 3 OF 71

NOTE NUMBER GENERAL NOTES DESCRIPTION

12 ITEMS 50 (13) AND ITEM 29 (85) SUPPLIED WITH ITEM 7.
ITEMS 50 (13) AND ITEM 30 (85) SUPPLIED WITH ITEMS 9, 10 AND 12.
ITEM 50(9) AND ITEM 29 (61) SUPPLIED WITH ITEM 11.

13 SECURE TO CABLE USING ITEM 26, MARKING TO READ AWAY FROM CONNECTOR ALIGN CENTER LINE OF BAND AND OF ASSOCIATED CONNECTOR MASTER KEY SLOT TO BE COLINEAR WITHIN + OR -0.25 IN.

14 MARK IDENTIFICATION BANDS AS NOTED IN TABLE 1,.12 INCH HIGH, COLOR BLACK PER ND1002019. CENTRALIZE

15 FILL THE SPACE BETWEEN WIRE BUNDLE AND STRAIN RELIEF CLAMP USING ITEM 23 TO SECURE WIRE BUNDLE IN THE CLAMP.

16 GRID MODULE IS ONE INCH BASIC FOR DIMENSIONING.
UNLESS OTHERWISE SPECIFIED
HARNESS DRAWING IS SHOWN AT TRUE POSITION. CENTERS OF HARNESS FEATURES SHALL BE WITHIN +.25 OR -.25 AND ENDS OF LEADS AND ACCESSORIES +.12 OR -.12 INCH TOLERANCE OF THE TRUE POSITIONS SHOWN. ALL TOLERANCES APPLY REGARDLESS OF FEATURE SIZE.

17 SUPPLIED WITH ITEM 13.

18 SOLDER PER ND1002071 USING ITEM 48 OR ITEMS 46 AND 47.

19 SERIALIZE PER ND1002023.

20 LEADS USE COMMON ACCESSORY

21 IN CIRCUIT POINT FIELD
I - INDICATES INNER LEAD
O - INDICATES OUTER LEAD

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 4 OF 71

NOTE NUMBER GENERAL NOTES DESCRIPTION

22 TYPICAL INSTALLATION OF CONTACTS AND ASSOCIATED HARDWARE---
ASSEMBLE ITEM 33 OVER BOTH LEADS (I AND O). ASSEMBLE ITEM 35, ITEM 34 OR 51, AND ITEM 32 OR 40 TO INNER LEAD IN ORDER LISTED. CRIMP ITEM 32 OR 40. ASSEMBLE ITEM 31 OR 41 TO ITEM 32 OR 40. SLIDE ITEM 35 OVER ITEM 31 OR 41 UNTIL SEATED. LAYOUTER LEAD AGAINST ITEM 31 OR 41 IN OPEN SECTION OF ITEM 35. SLIDE ITEM 33 FORWARD AGAINST SPRING AND CRIMP.

23 ASSEMBLE PER ND1002032.

24 ON TO END OF LEAD A360, ADD ITEMS 40,31 AND 35. CRIMP A WIRE STUB (2 INCH MAX) OF 24AWG WIRE (ITEM 14) IN ITEM 40 TO PROPERLY ASSEMBLE CONTACT PER NOTE 22. FOLD BACK FREE END .5 INCH AFTER ASSEMBLY AND SHRINK ITEM 58 OVER FOLD.

LEAD TOLERANCE CHART

	JKT STRIP LG	SHIELD STRIP LG	LEAD CUT LG	INS STRIP LG
UNDER 3 INCHES	+.06-.06	+.06-.06	+.06-.06	+.06-.00
3 INCH TO 3 FT	+.25-.25	+.25-.25	+.25-.25	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 5 OF 71

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	1	1	1897215-004	CONNECTOR, PLUG ELEC.
	2	1	6900050-011	CONNECTOR, PLUG ELEC.
	3	1	2900714-011	CONNECTOR, PLUG ELEC.
8	4	1	1897215-005	CONNECTOR, PLUG ELEC.
8	5	1	1897215-003	CONNECTOR, PLUG ELEC.
8	6	1	1897215-013	CONNECTOR, PLUG ELEC.
8	7	1	1897250-001	CONNECTOR, PLUG ELEC.
8	8	1	1897215-011	CONNECTOR, PLUG ELEC.
8	9	1	1897249-204	CONNECTOR, PLUG ELEC.
8	10	1	1897249-001	CONNECTOR, PLUG ELEC.
8	11	1	1897250-006	CONNECTOR, PLUG ELEC.
8	12	1	1897249-004	CONNECTOR, PLUG ELEC.
8	13	1	1897232-231	CONNECTOR, PLUG ELEC.
	14	1	6900143-001	WIRE ND1002181 TYPE 1, CLASS 1, 24AWG, WHT. 100FT. TOTAL LENGTH
	15	1	6900143-002	WIRE ND1002181 TYPE 2, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU 411FT. TOTAL LENGTH
	16	1	6900143-003	WIRE ND1002181 TYPE 3, CLASS 4, WHT. JKT. 22AWG WHT/RED, WHT/BLU, WHT/YEL 24FT. TOTAL LENGTH

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 6 OF 71

SEE NOTE LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	17	1	6900143-004	WIRE ND1002181, TYPE 1, CLASS 1, 22AWG, WHT. 136FT. TOTAL LENGTH
	18	1	6900143-005	WIRE ND1002181 TYPE 1, CLASS 1, 16AWG, WHT 44FT TOTAL LENGTH
8	19	180	1010763- 2	SOLDER SLEEVE
8	20	292	1010490-228	INSULATION SLEEVING
8	21	8	1016006-002	SPLICE REDUCER
8	22	8	1010490-258	INSULATION SLEEVING
	23	AR	MIL-I-631	FILLER TAPE, TYPE F FORM T (BLACK) GRADE A CLASS I .62 WIDE, .02 THICK
8	24	4	1016128-041	BAND IDENTIFICATION
8	25	11	1016128-011	BAND IDENTIFICATION
	26	AR	MIL-T-713B	LACING TAPE, TYPE P, CLASS 2 BLACK
	27	1	6900143-006	WIRE ND1002181, TYPE 2, CLASS 4, WHT. JKT. 24AWG WHT/RED, WHT/BLU 344FT. TOTAL LENGTH
8	28	122	1897300-003	CONTACT, ELECTRICAL, SPRING SOCKET
12	29	X	1897190- 1	CONTACT PIN
12	30	X	1897190- 2	CONTACT SOCKET
8	31	49	1016369-288	CONTACT OUTER MALE
8	32	49	1016369-388	CONTACT INNER FEMALE

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 7 OF 71

SEE NOTE LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	33	108	1016369-588	HYRING
8	34	49	1016369-712	SLEEVE INNER
8	35	~~107~~ 108	1016369-713	SLEEVE OUTER
8	36	1	1016369-721	CONTACT FEMALE
8	37	4	1016369-421	CONTACT FEMALE
8	38	23	1016369-420	CONTACT MALE
8	39	8	1016369-720	CONTACT MALE
8	40	~~58~~ 59	1016369-188	CONTACT INNER MALE
8	41	59	1016369-488	CONTACT OUTER FEMALE
8	42	4	1010933-105	STRAIN RELIEF CLAMP
8	43	1	1010933-104	STRAIN RELIEF CLAMP
	44	1	6900143-007	WIRE ND1002181 TYPE 3, CLASS 4 WHT JKT 24AWG, WHT/RED, WHT/BLU, WHT/YEL, 11FT. TOTAL LENGTH
	45	1	6900143-008	WIRE ND1002181 TYPE 1, CLASS 4, WHT JKT 24AWG, WHT, 43FT. TOTAL LENGTH
	46	AR	SN60WS	SOLDER QQ-S-571 (ES2175-1)
	47	AR	MIL-F-14256	TYPE A OR W FLUX (ES2798)
	48	AR	SN60WRAP	SOLDER QQ-S-571 (ES2175-3)
8	49	12	1010763- 1	SOLDER SLEEVE

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 8 OF 71

SEE NOTE LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
12	50	X	1016282- 24	GROMMET
8	51	~~58~~ 59	1016369-711	SLEEVE INNER
8	52	1	1897215-012	CONNECTOR, PLUG ELEC.
	53	1	6900143-009	WIRE ND1002181 TYPE 2, CLASS 4, WHT JKT 16AWG WHT/RED WHT/BLU 6FT. TOTAL LENGTH
8	54	2	1016006-004	SPLICE REDUCER
8	55	2	1010490-284	INSULATION SLEEVING
8	56	6	1897331-001	ADAPTER, CABLE CLAMP
8	57	6	1897330-001	CLAMP, CABLE
8	58	22	1010490-232	INSULATION SLEEVING
8	59	2	1010490-226	INSULATION SLEEVING
8	60	190	1897300-002	CONTACT, ELECTRICAL, SPRING SOCKET
8	61	25	1897300-001	CONTACT, ELECTRICAL, SPRING SOCKET
8	62	335	1015864-232	INSULATION, SLEEVING
8	63	1	1016282- 18	GROMMET
8	64	4	1016282- 22	GROMMET
17	65	X	AN3420-20-24	(1897147-020, 024) BUSHING-CABLE, ADAPTER, TELESCOPING

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 9 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTES 9, 22
A 1A	17		SHLD A1 P3-340	 12				.25 .18	NO NO		 60	
A 1B	14		P4-2/0 SHLD A1	2				.23 .25	NO NO		31, 33	
A 1L			P3-240 P4-3/0	12 2			 .32	.18 .23	NO NO		28 31	
A 1R			P3-140 P4-3/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 2	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 2A	17		SHLD A2 P3-640	 12				.25 .18	NO NO		 60	
A 2B	14		P4-2/I SHLD A2	2				.21 .25	NO NO		32, 34, 35	
A 2L			P3-540 P4-1/0	12 2			 .32	.18 .23	NO NO		28 31	
A 2R			P3-440 P4-1/I	12 2				.18 .21	NO NO		28 32, 34, 35	
A 3	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A 3A	17		SHLD A3 P3-341	 12				.25 .18	NO NO		 60	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 10 OF 71

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	3B	14		P4-11/O	2				.23	NO		31, 33	
				SHLD A3					.25	NO			
A	3L			P3-241	12				.18	NO		28	
				P4-12/O	2			.32	.23	NO		31	
A	3R			P3-141	12				.18	NO		28	
				P4-12/I	2				.21	NO		32, 34, 35	
A	4	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	4A	17		SHLD A4					.25	NO			
				P3-641	12				.18	NO		60	
A	4B	14		P4-11/I	2				.21	NO		32, 34, 35	
				SHLD A4					.25	NO			
A	4L			P3-541	12				.18	NO		28	
				P4-10/O	2			.32	.23	NO		31	
A	4R			P3-441	12				.18	NO		28	
				P4-10/I	2				.21	NO		32, 34, 35	
A	5	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	5A	17		SHLD A5					.25	NO			
				P3-342	12				.18	NO		60	
A	5B	14		P4-5/O	2				.23	NO		31, 33	
				SHLD A5					.25	NO			
A	5L			P3-242	12				.18	NO		28	
				P4-6/O	2			.32	.21	NO		31	

SIZE A

CODE IDENT NO. 99974

6900143

SCALE-NONE

REV LTR A

SHEET 11 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	5R			P3-142	12				.18	NO		28	
				P4-6/I	2				.21	NO		32, 34, 35	
A	6	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	6A	17		SHLD A6					.25	NO			
				P3-642	12				.18	NO		60	
A	6B	14		P4-5/I	2				.21	NO		32, 34, 35	
				SHLD A6					.25	NO			
A	6L			P3-542	12				.18	NO		28	
				P4-4/O	2			.32	.23	NO		31	
A	6R			P3-442	12				.18	NO		28	
				P4-4/I	2				.21	NO		32, 34, 35	
A	7	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	7A	17		SHLD A7					.25	NO			
				P3-343	12				.18	NO		60	
A	7B	14		P4-14/O	2				.23	NO		31, 33	
				SHLD A7					.25	NO			
A	7L			P3-243	12				.18	NO		28	
				P4-15/O	2			.32	.23	NO		31	
A	7R			P3-143	12				.18	NO		28	
				P4-15/I	2				.21	NO		32, 34, 35	
A	8	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9

SIZE A

CODE IDENT NO. 99974

6900143

SCALE-NONE

REV LTR A

SHEET 12 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	8A	17		SHLD A8					.25	NO			
				P3-643	12				.18	NO		60	
A	8B	14		P4-14/I	2				.21	NO		32, 34, 35	
				SHLD A8					.25	NO			
A	8L			P3-543	12				.18	NO		28	
				P4-13/O	2			.32	.23	NO		31	
A	8R			P3-443	12				.18	NO		28	
				P4-13/I	2				.21	NO		32, 34, 35	
A	9	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	9A	17		SHLD A9					.25	NO			
				P3-344	12				.18	NO		60	
A	9B	14		P4-8/O	2				.23	NO		31, 33	
				SHLD A9					.25	NO			
A	9L			P3-244	12				.18	NO		28	
				P4-9/O	2			.32	.23	NO		31	
A	9R			P3-144	12				.18	NO		28	
				P4-9/I	2				.21	NO		32, 34, 35	
A	10	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	10A	17		SHLD A10					.25	NO			
				P3-644	12				.18	NO		60	
A	10B	14		P4-8/I	2				.21	NO		32, 34, 35	
				SHLD A10					.25	NO			

SIZE A

CODE IDENT NO. 99974

6900143

SCALE-NONE

REV LTR A

SHEET 13 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	10L			P3-544	12				.18	NO		28	
				P4-7/O	2			.32	.23	NO		31	
A	10R			P3-444	12				.18	NO		28	
				P4-7/I	2				.21	NO		32, 34, 35	
A	11	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	11A	17		SHLD A11					.25	NO			
				P3-345	12				.18	NO		60	
A	11B	14		P4-17/O	2				.23	NO		31, 33	
				SHLD A11					.25	NO			
A	11L			P3-245	12				.18	NO		28	
				P4-18/O	2			.32	.23	NO		31	
A	11R			P3-145	12				.18	NO		28	
				P4-18/I	2				.21	NO		32, 34, 35	
A	12	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	12A	17		SHLD A12					.25	NO			
				P3-645	12				.18	NO		60	
A	12B	14		P4-17/I	2				.21	NO		32, 34, 35	
				SHLD A12					.25	NO			
A	12L			P3-545	12				.18	NO		28	
				P4-16/O	2			.32	.23	NO		31	
A	12R			P3-445	12				.18	NO		28	
				P4-16/I	2				.21	NO		32, 34, 35	

SIZE A

CODE IDENT NO. 99974

6900143

SCALE-NONE

REV LTR A

SHEET 14 OF 71

MIL 2084 9-65

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 13	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 13A	17		SHLD A13 P3-346	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 13B	17		P5-15 SHLD A13	4				.15 .25	NO NO		30	
A 13L			P3-246 P5-14	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 13R			P3-146 P5-13	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 14	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 14A	17		SHLD A14 P3-646	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 14B	17		P5-18 SHLD A14	4				.15 .25	NO NO		30	
A 14L			P3-546 P5-17	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 14R			P3-446 P5-16	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 15	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 15A	17		SHLD A15 P3-347	 12				.25 .18	NO NO		 61	 SEE NOTE 20

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 15 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 15B	17		P5-3 SHLD A15	4				.15 .25	NO NO		30	
A 15L			P3-247 P5-2	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 15R			P3-147 P5-1	12 4				.18 .15	NO NO		61 30	
A 16	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 16A	17		SHLD A16 P3-647	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 16B	17		P5-6 SHLD A16	4				.15 .25	NO NO		30	
A 16L			P3-547 P5-5	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 16R			P3-447 P5-4	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 17	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 17A	17		SHLD A17 P3-348	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 17B	17		P5-21 SHLD A17	4				.15 .25	NO NO		30	
A 17L			P3-248 P5-20	12 4				.18 .15	NO NO		61 30	SEE NOTE 20

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 16 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 17R			P3-148 P5-19	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 18	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 18A	17		SHLD A18 P3-648	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 18B	17		P5-24 SHLD A18	4				.15 .25	NO NO		30	
A 18L			P3-548 P5-23	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 18R			P3-448 P5-22	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 19	15				5.30 2.60	5.00 2.30				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 19A	17		SHLD A19 P3-349	 12				.25 .18	NO NO		 61	 SEE NOTE 20
A 19B	17		P5-9 SHLD A19	4				.15 .25	NO NO		30	
A 19L			P3-249 P5-8	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 19R			P3-149 P5-7	12 4				.18 .15	NO NO		61 30	SEE NOTE 20
A 20	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 17 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 20L			P2-K11 P3-528	15 12				.18 .18	NO NO		60 60	
A 20R			P2-H11 P3-428	15 12				.18 .18	NO NO		60 60	
A 21	15				5.30 5.30	5.00 5.00				B,7 B,7	20 20	
A 21L			P2-K10 P3-328	15 12				.18 .18	NO NO		60 60	
A 21R			P2-H10 P3-228	15 12				.18 .18	NO NO		60 60	
A 22	15				5.30 5.30	5.00 5.00				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 22A	17		SHLD A22 P2-B33	 15				.25 .18	NO NO		 60	
A 22B	17		P3-329 SHLD A22	12				.18 .25	NO NO		60	
A 22L			P2-B34 P3-229	15 12				.18 .18	NO NO		60 60	
A 22R			P2-B35 P3-129	15 12				.18 .18	NO NO		60 60	
A 23	15				5.30 5.30	5.00 5.00				A,68 A,68	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 23A	17		SHLD A23 P2-D33	 15				.25 .18	NO NO		 60	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 18 OF 71

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 23B	17		P3-629 SHLD A23	12				.18 .25	NO NO		60	
A 23L			P2-D34 P3-529	15 12				.18 .18	NO NO		60 60	
A 23R			P2-D35 P3-429	15 12				.18 .18	NO NO		60 60	
A 24	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 24A	17		SHLD A24 P2-G33	 15				.25 .18	NO NO		 60	
A 24B	17		P3-330 SHLD A24	12				.18 .25	NO NO		60	
A 24L			P2-G34 P3-230	15 12				.18 .18	NO NO		60 60	
A 24R			P2-G35 P3-130	15 12				.18 .18	NO NO		60 60	
A 25	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 25A	17		SHLD A25 P2-C33	 15				.25 .18	NO NO		 60	
A 25B	17		P3-630 SHLD A25	12				.18 .25	NO NO		60	
A 25L			P2-C34 P3-530	15 12				.18 .18	NO NO		60 60	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 19 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 25R			P2-C35 P3-430	15 12				.18 .18	NO NO		60 60	
A 26	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 26A	17		SHLD A26 P2-F33	 15				.25 .18	NO NO		 60	
A 26B	17		P3-331 SHLD A26	12				.18 .25	NO NO		60	
A 26L			P2-F34 P3-231	15 12				.18 .18	NO NO		60 60	
A 26R			P2-F35 P3-131	15 12				.18 .18	NO NO		60 60	
A 27	15				5.30 5.30	5.00 5.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 27A	17		SHLD A27 P2-H33	 15				.25 .18	NO NO		 60	
A 27B	17		P3-631 SHLD A27	12				.18 .25	NO NO		60	
A 27L			P2-H34 P3-531	15 12				.18 .18	NO NO		60 60	
A 27R			P2-H35 P3-431	15 12				.18 .18	NO NO		60 60	
A 28	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 20 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 28A	17		SHLD A28 E4	 22				.25 .38	NO NO			
A 28B	17		P5-33 SHLD A28	4				.15 .25	NO NO		30	
A 28L			P3-232 P5-32	12 4				.18 .15	NO NO		60 30	
A 28R			P3-132 P5-31	12 4				.18 .15	NO NO		60 30	
A 29	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 29A	17		SHLD A29 E4	 22				.25 .38	NO NO			
A 29B	17		P5-30 SHLD A29	4				.15 .25	NO NO		30	
A 29L			P3-532 P5-29	12 4				.18 .15	NO NO		60 30	
A 29R			P3-432 P5-28	12 4				.18 .15	NO NO		60 30	
A 31	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 31A	17		SHLD A31 E4	 22				.25 .38	NO NO			
A 31B	17		P5-36 SHLD A31	4				.15 .25	NO NO		30	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 21 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 31L			P3-533 P5-35	12 4				.18 .15	NO NO		60 30	
A 31R			P3-433 P5-34	12 4				.18 .15	NO NO		60 30	
A 32	15				5.30 2.60	5.00 2.30				A,6A A,6B	19, 20 19, 20	
A 32A	17		SHLD A32 E4	 22				.25 .38	NO NO			
A 32B	17		P5-39 SHLD A32	4				.15 .25	NO NO		30	
A 32L			P3-234 P5-38	12 4				.18 .15	NO NO		60 30	
A 32R			P3-134 P5-37	12 4				.18 .15	NO NO		60 30	
A 33	17		P2-H8 P3-136	15 12				.18 .18	NO NO		60 60	
A 34	17		P2-K8 P3-336	15 12				.18 .18	NO NO		60 60	
A 35	14		P3-113 P9-37/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A 36	14		P3-612 P9-37/O	12 6				.18 .23	NO NO		28 41, 33	
A 37	17		P3-512 P9-38	12 6				.18 .21	NO NO		60 37	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE
REV LTR A
SHEET 22 OF 71

MIL 2084 9-65

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	38	14		P3-412 P9-36/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	39	14		P3-312 P9-36/O	12 6				.18 .23	NO NO		28 41, 33	
A	40	17		P3-112 P9-52	12 6				.18 .21	NO NO		60 37	
A	41	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	41A	17		SHLD A41 P3-111	 12				.25 .18	NO NO		 60	
A	41B	17		P9-32 SHLD A41	6				.21 .25	NO NO		37	
A	41L			P3-211 P9-31/O	12 6			 .22	.18 .23	NO NO		28 41	
A	41R			P3-311 P9-31/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	42	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	42A	17		SHLD A42 P3-410	 12				.25 .18	NO NO		 60	
A	42B	14		P9-2/I SHLD A42	6				.21 .25	NO NO		40, 51, 35	
A	42L			P3-510 P9-1/O	12 6			 .22	.18 .23	NO NO		28 41	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 23 OF 71

MIL 2084 9-65

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	42R			P3-610 P9-1/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	43	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	43A	17		SHLD A43 P3-110	 12				.25 .18	NO NO		 60	
A	43B	14		P9-2/O SHLD A43	6				.23 .25	NO NO		41, 33	
A	43L			P3-210 P9-3/O	12 6			 .22	.18 .23	NO NO		28 41	
A	43R			P3-310 P9-3/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	44	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	44A	17		SHLD A44 P3-409	 12				.25 .18	NO NO		 60	
A	44B	14		P9-5/I SHLD A44	6				.21 .25	NO NO		40, 51, 35	
A	44L			P3-509 P9-4/O	12 6			 .22	.18 .23	NO NO		28 41	
A	44R			P3-609 P9-4/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	45	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 24 OF 71

MIL 2084 9-65

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	45A	17		SHLD A45 P3-109	 12				.25 .18	NO NO		 60	
A	45B	14		P9-5/O SHLD A45	6				.23 .25	NO NO		41, 33	
A	45L			P3-209 P9-6/O	12 6			 .22	.18 .23	NO NO		28 41	
A	45R			P3-309 P9-6/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	46	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	46A	17		SHLD A46 P3-408	 12				.25 .18	NO NO		 60	
A	46B	14		P9-8/I SHLD A46	6				.21 .25	NO NO		40, 51, 35	
A	46L			P3-508 P9-7/O	12 6			 .22	.18 .23	NO NO		28 41	
A	46R			P3-608 P9-7/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	47	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	47A	17		SHLD A47 P3-108	 12				.25 .18	NO NO		 60	
A	47B	14		P9-8/O SHLD A47	6				.23 .25	NO NO		41, 33	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 25 OF 71

MIL 2084 9-65

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	47L			P3-208 P9-9/O	12 6			 .22	.18 .23	NO NO		28 41	
A	47R			P3-308 P9-9/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	48	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	48A	17		SHLD A48 P3-407	 12				.25 .18	NO NO		 60	
A	48B	14		P9-11/I SHLD A48	6				.21 .25	NO NO		40, 51, 35	
A	48L			P3-507 P9-10/O	12 6			 .22	.18 .23	NO NO		28 41	
A	48R			P3-607 P9-10/I	12 6				.18 .21	NO NO		28 40, 51, 35	
A	49	27				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20, 33	SEE NOTE 9 SEE NOTE 9
A	49A	17		SHLD A49 P3-107	 12				.25 .18	NO NO		 60	
A	49B	14		P9-11/O SHLD A49	6				.23 .25	NO NO		41, 33	
A	49L			P3-207 P9-12/O	12 6			 .22	.18 .23	NO NO		28 41	
A	49R			P3-307 P9-12/I	12 6				.18 .21	NO NO		28 40, 51, 35	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 26 OF 71

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	50	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	50A	17		SHLD A50					.25	NO			
				P3-406	12				.18	NO		60	
A	50B	14		P9-14/I	6				.21	NO		40, 51, 35	
				SHLD A50					.25	NO			
A	50L			P3-506	12				.18	NO		28	
				P9-13/O	6			.22	.23	NO		41	
A	50R			P3-606	12				.18	NO		28	
				P9-13/I	6				.21	NO		40, 51, 35	
A	51	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	51A	17		SHLD A51					.25	NO			
				P3-106	12				.18	NO		60	
A	51B	14		P9-14/O	6				.23	NO		41, 33	
				SHLD A51					.25	NO			
A	51L			P3-206	12				.18	NO		28	
				P9-15/O	6			.22	.23	NO		41	
A	51R			P3-306	12				.18	NO		28	
				P9-15/I	6				.21	NO		40, 51, 35	
A	52	14		P3-213	12				.18	NO		28	
				P9-39/O	6				.23	NO		41, 33	
A	53	14		P3-313	12				.18	NO		28	
				P9-39/I	6				.21	NO		40, 51, 35	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	54	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	54A	17		SHLD A54					.25	NO			
				P3-405	12				.18	NO		60	
A	54B	14		P9-17/I	6				.21	NO		40, 51, 35	
				SHLD A54					.25	NO			
A	54L			P3-505	12				.18	NO		28	
				P9-16/O	6			.22	.23	NO		41	
A	54R			P3-605	12				.18	NO		28	
				P9-16/I	6				.21	NO		40, 51, 35	
A	55	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	55A	17		SHLD A55					.25	NO			
				P3-105	12				.18	NO		60	
A	55B	14		P9-17/O	6				.23	NO		41, 33	
				SHLD A55					.25	NO			
A	55L			P3-205	12				.18	NO		28	
				P9-18/O	6			.22	.23	NO		41	
A	55R			P3-305	12				.18	NO		28	
				P9-18/I	6				.21	NO		40, 51, 35	
A	56	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	56A	17		SHLD A56					.25	NO			
				P3-404	12				.18	NO		60	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	56B	14		P9-20/I	6				.21	NO		40, 51, 35	
				SHLD A56					.25	NO			
A	56L			P3-504	12				.18	NO		28	
				P9-19/O	6			.22	.23	NO		41	
A	56R			P3-604	12				.18	NO		28	
				P9-19/I	6				.21	NO		40, 51, 35	
A	57	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	57A	17		SHLD A57					.25	NO			
				P3-104	12				.18	NO		60	
A	57B	14		P9-20/O	6				.23	NO		41, 33	
				SHLD A57					.25	NO			
A	57L			P3-204	12				.18	NO		28	
				P9-21/O	6			.22	.23	NO		41	
A	57R			P3-304	12				.18	NO		28	
				P9-21/I	6				.21	NO		40, 51, 35	
A	58	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	58A	17		SHLD A58					.25	NO			
				P3-403	12				.18	NO		60	
A	58B	14		P9-23/I	6				.21	NO		40, 51, 35	
				SHLD A58					.25	NO			
A	58L			P3-503	12				.18	NO		28	
				P9-22/O	6			.22	.23	NO		41	

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	58R			P3-603	12				.18	NO		28	
				P9-22/I	6				.21	NO		40, 51, 35	
A	59	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	59A	17		SHLD A59					.25	NO			
				P3-103	12				.18	NO		60	
A	59B	14		P9-23/O	6				.23	NO		41, 33	
				SHLD A59					.25	NO			
A	59L			P3-203	12				.18	NO		28	
				P9-24/O	6			.22	.23	NO		41	
A	59R			P3-303	12				.18	NO		28	
				P9-24/I	6				.21	NO		40, 51, 35	
A	60	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9
A	60A	17		SHLD A60					.25	NO			
				P3-402	12				.18	NO		60	
A	60B	14		P9-26/I	6				.21	NO		40, 51, 35	
				SHLD A60					.25	NO			
A	60L			P3-502	12				.18	NO		28	
				P9-25/O	6			.22	.23	NO		41	
A	60R			P3-602	12				.18	NO		28	
				P9-25/I	6				.21	NO		40, 51, 35	
A	61	27				5.30	5.00				A,68	19, 20	SEE NOTE 9
						2.60	2.30				A,68	19, 20, 33	SEE NOTE 9

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE UNE. FIG	ACCESSORY ITEMS	REMARKS
A	61A	17		SHLD A61					.25	NO			
				P3-102	12				.18	NO		60	
A	61B	14		P9-26/0	6				.23	NO		41, 33	
				SHLD A61					.25	NO			
A	61L			P3-202	12				.18	NO		28	
				P9-27/0	.6			.22	.23	NO		41	
A	61R			P3-302	12				.18	NO		28	
				P9-27/I	6				.21	NO		40, 51, 35	
A	62	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	62A	17		SHLD A62					.25	NO			
				P3-401	12				.18	NO		60	
A	62B	14		P9-29/I	6				.21	NO		40, 51, 35	
				SHLD A62					.25	NO			
A	62L			P3-501	12				.18	NO		28	
				P9-28/0	6			.22	.23	NO		41	
A	62R			P3-601	12				.18	NO		28	
				P9-28/I	6				.21	NO		40, 51, 35	
A	63	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20, 33	SEE NOTE 9
A	63A	17		SHLD A63					.25	NO			
				P3-101	12				.18	NO		60	
A	63B	14		P9-29/0	6				.23	NO		41, 33	
				SHLD A63					.25	NO			

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE UNE. FIG	ACCESSORY ITEMS	REMARKS
A	63L			P3-201	12				.18	NO		28	
				P9-30/0	6			.22	.23	NO		41	
A	63R			P3-301	12				.18	NO		28	
				P9-30/I	6				.21	NO		40, 51, 35	
A	64	15				5.30	5.00				A,6B	19, 20	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	64A	17		SHLD A64					.25	NO			
				P3-649	12				.18	NO		61	SEE NOTE 20
A	64B	17		P5-12	4				.15	NO		30	
				SHLD A64					.25	NO			
A	64L			P3-549	12				.18	NO		61	SEE NOTE 20
				P5-11	4				.15	NO		30	
A	64R			P3-449	12				.18	NO		61	SEE NOTE 20
				P5-10	4				.15	NO		30	
A	65	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	65A	17		SHLD A65					.25	NO			
				E4	22				.38	NO			
A	65B	17		P6-18	5				.15	NO		29	
				SHLD A65					.25	NO			
A	65L			P3-215	12				.18	NO		60	
				P6-36	5				.15	NO		29	
A	65R			P3-115	12				.18	NO		60	
				P6-19	5				.15	NO		29	

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE UNE. FIG	ACCESSORY ITEMS	REMARKS
A	66	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	66A	17		SHLD A66					.25	NO			
				E4	22				.38	NO			
A	66B	17		P6-15	5				.15	NO		29	
				SHLD A66					.25	NO			
A	66L			P3-415	12				.18	NO		60	
				P6-31	5				.15	NO		29	
A	66R			P3-315	12				.18	NO		60	
				P6-30	5				.15	NO		29	
A	67	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	67A	17		SHLD A67					.25	NO			
				E4	22				.38	NO			
A	67B	17		P6-1	5				.15	NO		29	
				SHLD A67					.25	NO			
A	67L			P3-615	12				.18	NO		60	
				P6-5	5				.15	NO		29	
A	67R			P3-515	12				.18	NO		60	
				P6-4	5				.15	NO		29	
A	68	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	68A	17		SHLD A68					.25	NO			
				E4	22				.38	NO			

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SCALE-NONE | REV LTR A | SHEET 33 OF 71

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CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A	68B	17		P6-26	5				.15	NO		29	
				SHLD A68					.25	NO			
A	68L			P3-216	12				.18	NO		60	
				P6-11	5				.15	NO		29	
A	68R			P3-116	12				.18	NO		60	
				P6-25	5				.15	NO		29	
A	69	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	69A	17		SHLD A69					.25	NO			
				E4	22				.38	NO			
A	69B	17		P6-16	5				.15	NO		29	
				SHLD A69					.25	NO			
A	69L			P3-416	12				.18	NO		60	
				P6-33	5				.15	NO		29	
A	69R			P3-316	12				.18	NO		60	
				P6-17	5				.15	NO		29	
A	70	15				5.30	5.00				A,6A	20, 19	SEE NOTE 9
						2.60	2.30				A,6B	19, 20	SEE NOTE 9
A	70A	17		SHLD A70					.25	NO			
				E4	22				.38	NO			
A	70B	17		P6-13	5				.15	NO		29	
				SHLD A70					.25	NO			
A	70L			P3-616	12				.18	NO		60	
				P6-28	5				.15	NO		29	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 70R			P3-516 P6-27	12 5				.18 .15	NO NO		60 29	
A 71	15				5.30 2.60	5.00 2.30				A,6A A,6B	20, 19 19, 20	SEE NOTE 9 SEE NOTE 9
A 71A	17		SHLD A71 E4	 22				.25 .38	NO NO			
A 71B	17		P6-9 SHLD A71	5				.15 .25	NO NO		29	
A 71L			P3-217 P6-23	12 5				.18 .15	NO NO		60 29	
A 71R			P3-117 P6-22	12 5				.18 .15	NO NO		60 29	
A 72	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 72A	17		SHLD A72 P7-17	 8				.25 .15	NO NO		 30	
A 72B	17		P13-17 SHLD A72	1				.15 .25	NO NO		30	
A 72L			P7-33 P13-33	8 1				.15 .15	NO NO		30 30	
A 72R			P7-16 P13-16	8 1				.15 .15	NO NO		30 30	
A 73	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 35 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 73A	17		SHLD A73 P7-9	 8				.25 .15	NO NO		 30	
A 73B	17		P13-9 SHLD A73	1				.15 .25	NO NO		30	
A 73L			P7-22 P13-21	8 1				.15 .15	NO NO		30 30	
A 73R			P7-21 P13-22	8 1				.15 .15	NO NO		30 30	
A 74	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 74A	17		SHLD A74 P7-24	 8				.25 .15	NO NO		 30	
A 74B	17		P13-24 SHLD A74	1				.15 .25	NO NO		30	
A 74L			P7-10 P13-23	8 1				.15 .15	NO NO		30 30	
A 74R			P7-23 P13-10	8 1				.15 .15	NO NO		30 30	
A 75	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 75A	17		SHLD A75 P7-26	 8				.25 .15	NO NO		 30	
A 75B	17		P13-26 SHLD A75	1				.15 .25	NO NO		30	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 36 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 75L			P7-11 P13-25	8 1				.15 .15	NO NO		30 30	
A 75R			P7-25 P13-11	8 1				.15 .15	NO NO		30 30	
A 76	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 76A	17		SHLD A76 P7-13	 8				.25 .15	NO NO		 30	
A 76B	17		P13-13 SHLD A76	1				.15 .25	NO NO		30	
A 76L			P7-12 P13-27	8 1				.15 .15	NO NO		30 30	
A 76R			P7-27 P13-12	8 1				.15 .15	NO NO		30 30	
A 77	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	SEE NOTE 9 SEE NOTE 9
A 77A	17		SHLD A77 P7-30	 8				.25 .15	NO NO		 30	
A 77B	17		P13-30 SHLD A77	1				.15 .25	NO NO		30	
A 77L			P7-14 P13-29	8 1				.15 .15	NO NO		30 30	
A 77R			P7-29 P13-14	8 1				.15 .15	NO NO		30 30	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 37 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 78	15				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20 19, 20	
A 78A	17		SHLD A78 P7-32	 8				.25 .15	NO NO		 30	
A 78B	17		P13-32 SHLD A78	1				.15 .25	NO NO		30	
A 78L			P7-15 P13-31	8 1				.15 .15	NO NO		30 30	
A 78R			P7-31 P13-15	8 1				.15 .15	NO NO		30 30	
A 79	27				2.30 2.30	2.00 2.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 79A	14		SHLD A79 P8-25/I	 7				.25 .21	NO NO		 32, 34, 35	
A 79B	17		P13-38 SHLD A79	1				.15 .25	NO NO		30	
A 79L			P8-24/O P13-62	7 1			.32	.23 .15	NO NO		31 30	
A 79R			P8-24/I P13-63	7 1				.21 .15	NO NO		32, 34, 35 30	
A 80	15				2.30 2.30	2.00 2.00				B,7 B,7	20 20	
A 80L			P11-30 P13-56	9 1				.15 .15	NO NO		29 30	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 38 OF 71

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A	80R			P11-29	9				.15	NO		29	
				P13-81	1				.15	NO		30	
A	81	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	81L			P11-2	9				.15	NO		29	
				P13-1	1				.15	NO		30	
A	81R			P11-1	9				.15	NO		29	
				P13-2	1				.15	NO		30	
A	82	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	82L			P11-4	9				.15	NO		29	
				P13-4	1				.15	NO		30	
A	82R			P11-3	9				.15	NO		29	
				P13-3	1				.15	NO		30	
A	83	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	83L			P11-6	9				.15	NO		29	
				P13-6	1				.15	NO		30	
A	83R			P11-5	9				.15	NO		29	
				P13-5	1				.15	NO		30	
A	84	15				2.80	2.50				A,68	20, 19	SEE NOTE 9
						2.80	2.50				A,68	19, 20	SEE NOTE 9
A	84A	17		SHLD A84					.25	NO			
				P7-36	8				.15	NO		30	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE REV LTR A SHEET 39 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A	84B	17		P13-36	1				.15	NO		30	
				SHLD A84					.25	NO			
A	84L			P7-35	8				.15	NO		30	
				P13-35	1				.15	NO		30	
A	84R			P7-18	8				.15	NO		30	
				P13-18	1				.15	NO		30	
A	85	15				2.80	2.50				A,68	19, 20	SEE NOTE 9
						2.80	2.50				A,68	19, 20	SEE NOTE 9
A	85A	17		SHLD A85					.25	NO			
				P7-20	8				.15	NO		30	
A	85B	17		P13-20	1				.15	NO		30	
				SHLD A85					.25	NO			
A	85L			P7-37	8				.15	NO		30	
				P13-37	1				.15	NO		30	
A	85R			P7-19	8				.15	NO		30	
				P13-19	1				.15	NO		30	
A	86	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	86L			P11-38	9				.15	NO		29	
				P13-61	1				.15	NO		30	
A	86R			P11-37	9				.15	NO		29	
				P13-85	1				.15	NO		30	
A	87	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE REV LTR A SHEET 40 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A	87L			P11-40	9				.15	NO		29	
				P13-59	1				.15	NO		30	
A	87R			P11-39	9				.15	NO		29	
				P13-84	1				.15	NO		30	
A	88	15				2.30	2.00				B,7	20	
						2.30	2.00				B,7	20	
A	88L			P11-42	9				.15	NO		29	
				P13-58	1				.15	NO		30	
A	88R			P11-41	9				.15	NO		29	
				P13-82	1				.15	NO		30	
A	89	27				2.30	2.00				A,68	19, 20, 33	SEE NOTE 9
						2.30	2.00				A,68	19, 20	SEE NOTE 9
A	89A	14		SHLD A89					.25	NO			
				P8-11/I	7				.21	NO		32, 34, 35	
A	89B	17		P13-42	1				.15	NO		30	
				SHLD A89					.25	NO			
A	89L			P8-10/0	7			.32	.23	NO		31	
				P13-66	1				.15	NO		30	
A	89R			P8-10/I	7				.21	NO		32, 34, 35	
				P13-41	1				.15	NO		30	
A	90	27				2.80	2.50				A,68	19, 20, 33	SEE NOTE 9
						2.80	2.50				A,68	19, 20	SEE NOTE 9
A	90A	14		SHLD A90					.25	NO			
				P8-8/0	7				.23	NO		31, 33	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE REV LTR A SHEET 41 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A	90B	17		P13-71	1				.15	NO		30	
				SHLD A90					.25	NO			
A	90L			P8-9/0	7			.32	.23	NO		31	
				P13-70	1				.15	NO		30	
A	90R			P8-9/I	7				.21	NO		32, 34, 35	
				P13-46	1				.15	NO		30	
A	91	27				2.80	2.50				A,68	19, 20, 33	SEE NOTE 9
						2.80	2.50				A,68	19, 20	SEE NOTE 9
A	91A	14		SHLD A91					.25	NO			
				P8-8/I	7				.21	NO		32, 34, 35	
A	91B	17		P13-47	1				.15	NO		30	
				SHLD A91					.25	NO			
A	91L			P8-7/0	7			.32	.23	NO		31	
				P13-48	1				.15	NO		30	
A	91R			P8-7/I	7				.21	NO		32, 34, 35	
				P13-72	1				.15	NO		30	
A	92	27				2.80	2.50				A,68	19, 20, 33	SEE NOTE 9
						2.80	2.50				A,68	19, 20	SEE NOTE 9
A	92A	14		SHLD A92					.25	NO			
				P8-5/0	7				.23	NO		31, 33	
A	92B	17		P13-80	1				.15	NO		30	
				SHLD A92					.25	NO			
A	92L			P8-6/0	7			.32	.23	NO		31	
				P13-79	1				.15	NO		30	

SIZE A
CODE IDENT NO. 99974
6900143
SCALE-NONE REV LTR A SHEET 42 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 92R			P8-6/I P13-55	7 1				.21 .15	NO NO		32, 34, 35 30	
A 93	27				2.80 2.80	2.50 2.50				A,68 A,68	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 93A	14		SHLD A93 P8-5/I	 7				.25 .21	NO NO		 32, 34, 35	
A 93B	17		P13-40 SHLD A93	1				.15 .25	NO NO		30	
A 93L			P8-4/O P13-65	7 1			.32	.23 .15	NO NO		31 30	
A 93R			P8-4/I P13-64	7 1				.21 .15	NO NO		32, 34, 35 30	
A 94	27				2.80 2.80	2.50 2.50				A,68 A,68	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 94A	14		SHLD A94 P8-2/O	 7				.25 .23	NO NO		 31, 33	
A 94B	17		P13-52 SHLD A94	1				.15 .25	NO NO		30	
A 94L			P8-3/O P13-76	7 1			.32	.23 .15	NO NO		31 30	
A 94R			P8-3/I P13-77	7 1				.21 .15	NO NO		32, 34, 35 30	
A 95	27				2.80 3.30	2.50 3.00				A,68 A,68	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 43 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 95A	14		SHLD A95 P8-2/I	 7				.25 .21	NO NO		 32, 34, 35	
A 95B	17		P13-54 SHLD A95	1				.15 .25	NO NO		30	
A 95L			P8-1/O P13-78	7 1			.32	.23 .15	NO NO		31 30	
A 95R			P8-1/I P13-53	7 1				.21 .15	NO NO		32, 34, 35 30	
A 96	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 96A	14		SHLD A96 P8-11/O	 7				.25 .23	NO NO		 31, 33	
A 96B	17		P13-68 SHLD A96	1				.15 .25	NO NO		30	
A 96L			P8-12/O P13-67	7 1			.32	.23 .15	NO NO		31 30	
A 96R			P8-12/I P13-43	7 1				.21 .15	NO NO		32, 34, 35 30	
A 97	27				2.80 3.30	2.50 3.00				A,6B A,6B	19, 20, 33 19, 20	SEE NOTE 9 SEE NOTE 9
A 97A	17		SHLD A97 P8-14	 7				.25 .18	NO NO		 38	
A 97B	17		P13-45 SHLD A97	1				.15 .25	NO NO		30	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 44 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 97L			P8-13/O P13-69	7 1			.32	.23 .15	NO NO		31 30	
A 97R			P8-13/I P13-44	7 1				.21 .15	NO NO		32, 34, 35 30	
A 98	14		P2-G19 P8-42/I	15 7				.18 .21	NO NO		28 32, 33	
A 99	27				5.30 2.30	5.00 2.00				8,7 8,7	20 20	
A 99L			P2-A25 P4-23/O	15 2			 .32	.18 .23	NO NO		28 31, 33	
A 99R			P2-A24 P4-23/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100	27				5.30 2.30	5.00 2.00				8,7 8,7	20 20, 33	
A 100L			P2-K30 P4-26/I	15 2				.18 .21	NO NO		28 32, 34, 35	
A 100R			P2-K31 P4-26/O	15 2			 .32	.18 .23	NO NO		28 31	
A 102	15				5.30 2.30	5.00 2.00				8,7 8,7	20 20	
A 102L			P2-K7 P1-30	15 3				.18 .18	NO NO		60 38	
A 102R			P2-K6 P1-29	15 3				.18 .18	NO NO		60 38	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 45 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 103	15				5.30 2.30	5.00 2.00				8,7 8,7	20 20	
A 103L			P2-D7 P1-23	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A 103R			P2-D6 P1-22	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A 104	15				5.30 2.30	5.00 2.00				8,7 8,7	20 20	
A 104L			P2-C7 P1-19	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A 104R			P2-C6 P1-18	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A 105	17		P2-F8 P1-24	15 3				.18 .18	NO NO		60 38	
A 107	15				2.30 2.30	2.00 2.00				8,7 8,7	20 20	
A 107L			E11 P1-28	14 3				.38 .18	NO NO		 38	SEE NOTE 20
A 107R			E13 P1-27	16 3				.38 .18	NO NO		 38	SEE NOTE 20
A 108	16				5.30 2.30	5.00 2.00				8,7 8,7	20 20	
A 108L			P2-G12 P1-33	15 3				.18 .18	NO NO		60 39	SEE NOTE 20

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 46 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	108R			P2-D12	15				.18	NO		60	
				P1-32	3				.18	NO		39	SEE NOTE 20
A	108Y			P2-F12	15				.18	NO		60	
				P1-34	3				.18	NO		39	SEE NOTE 20
A	109	15				5.30	5.00				B,7	20	
						2.30	2.00				B,7	20	
A	109L			P2-B14	15				.18	NO		60	
				P1-38	3				.18	NO		38	
A	109R			P2-A14	15				.18	NO		60	
				P1-37	3				.18	NO		38	
A	110	15				5.30	5.00				B,7	20	
						2.30	2.00				B,7	20	
A	110L			P2-K13	15				.18	NO		60	
				P1-42	3				.18	NO		39	SEE NOTE 20
A	110R			P2-H13	15				.18	NO		60	
				P1-41	3				.18	NO		39	SEE NOTE 20
A	112	15				2.30	2.00				B,7	20	
						5.30	5.00				B,7	20	
A	112L			P11-35	9				.15	NO		29	
				P2-K14	15				.18	NO		60	
A	112R			P11-34	9				.15	NO		29	
				P2-H14	15				.18	NO		60	
A	114	45				3.30	3.00				A,6A	49, 58	
						5.30	5.00				B,7	58	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 47 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	114A	17		SHLD A114					.25	NO			
				E1	21				.25	NO			
A	114W			P12-2/I	18				.21	NO		35, 40, 51	
				P3-620	12				.18	NO		28	
A	115	45				3.30	3.00				A,6A	49, 58	
						5.30	5.00				B,7	58	
A	115A	17		SHLD A115					.25	NO			
				E1	21				.25	NO			
A	115W			P12-9/I	18				.21	NO		35, 40, 51	
				P3-121	12				.18	NO		28	
A	116	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	
A	116A	17		SHLD A116					.25	NO			
				E1	21				.25	NO			
A	116W			P12-3/I	18				.21	NO		35, 40, 51	
				P3-221	12				.18	NO		28	
A	117	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	
A	117A	17		SHLD A117					.25	NO			
				E1	21				.25	NO			
A	117W			P12-10/I	18				.21	NO		35, 40, 51	
				P3-321	12				.18	NO		28	
A	118	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 48 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	118A	17		SHLD A118					.25	NO			
				E1	21				.25	NO			
A	118W			P12-3/O	18			.22	.23	NO		41	
				P3-421	12				.18	NO		28	
A	119	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	
A	119A	17		SHLD A119						NO			
				E1	21					NO			
A	119W			P12-10/O	18			.22	.23	NO		41	
				P3-521	12				.18	NO		28	
A	120	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	
A	120A	17		SHLD A120					.25	NO			
				E2	19				.25	NO			
A	120W			P12-1/O	18				.23	NO		41	
				P3-621	12				.18	NO		28	
A	121	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	
A	121A	17		SHLD A121					.25	NO			
				E2	19				.25	NO			
A	121W			P12-11/I	18				.21	NO		35, 40, 51	
				P3-122	12				.18	NO		28	
A	122	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 49 OF 71

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CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	122A	17		SHLD A122					.25	NO			
				E2	19				.25	NO			
A	122W			P12-1/I	18				.21	NO		35, 40, 51	
				P3-222	12				.18	NO		28	
A	123	45				3.30	3.00				A,6A	33, 49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	
A	123A	17		SHLD A123					.25	NO			
				E2	19				.25	NO			
A	123W			P12-11/O	18				.23	NO		41	
				P3-322	12				.18	NO		28	
A	124	27				5.30	5.00				B,7	20	
						2.80	2.50				B,7	20, 33	
A	124L			P2-B26	15				.18	NO		28	
				P4-19/O	2			.32	.23	NO		31	
A	124R			P2-A26	15				.18	NO		28	
				P4-19/I	2				.21	NO		32, 34, 35	
A	125	27				5.30	5.00				B,7	20	
						2.80	2.50				B,7	20, 33	
A	125L			P2-B28	15				.18	NO		28	
				P4-20/O	2			.32	.23	NO		31	
A	125R			P2-A28	15				.18	NO		28	
				P4-20/I	2				.21	NO		32, 34, 35	
A	126	27				5.30	5.00				B,7	20	
						2.80	2.50				B,7	20, 33	

SIZE	CODE IDENT NO.	
A	99974	6900143
SCALE-NONE	REV LTR A	SHEET 50 OF 71

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CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 126L			P2-B30	15				.18	NO		28	
			P4-21/O	2			.32	.23	NO		31	
A 126R			P2-A30	15				.18	NO		28	
			P4-21/I	2				.21	NO		32, 34, 35	
A 127	15				2.80	2.50				B,7	20	
					5.30	5.00				B,7	20	
A 127L			P11-32	9				.15	NO		29	
			P2-B25	15				.18	NO		60	
A 127R			P11-31	9				.15	NO		29	
			P2-B24	15				.18	NO		60	
A 128	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 128L			P2-A21	15				.18	NO		60	
			P3-338	12				.18	NO		60	
A 128R			P2-B21	15				.18	NO		60	
			P3-238	12				.18	NO		60	
A 129	17		P2-B17	15				.18	NO		60	
			P3-138	12				.18	NO		60	
A 130	27				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20, 33	
A 130L			P2-K28	15				.18	NO		28	
			P4-25/O	2			.32	.23	NO		31	
A 130R			P2-K29	15				.18	NO		28	
			P4-25/I	2				.21	NO		32, 34, 35	

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CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 131	15				5.30	5.00				B,7	20	
					2.80	2.50				B,7	20	
A 131L			P2-G5	15				.18	NO		60	
			E11	14				.38	NO			
A 131R			P2-G4	15				.18	NO		60	
			E10	13				.38	NO			
A 134	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 134A	17		SHLD A134					.25	NO			
			P2-G23	15				.18	NO		60	
A 134B	14		P8-25/O	7				.23	NO		31, 33	
			SHLD A134					.25	NO			
A 134L			P2-K23	15				.18	NO		28	
			P8-26/O	7			.32	.23	NO		31	
A 134R			P2-H23	15				.18	NO		28	
			P8-26/I	7				.21	NO		32, 34, 35	
A 135	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 135A	17		SHLD A135					.25	NO			
			P2-G24	15				.18	NO		60	
A 135B	14		P8-16/I	7				.21	NO		32, 34, 35	
			SHLD A135					.25	NO			
A 135L			P2-K24	15				.18	NO		28	
			P8-15/O	7			.32	.23	NO		31	

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CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 135R			P2-H24	15				.18	NO		28	
			P8-15/I	7				.21	NO		32, 34, 35	
A 136	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 136A	17		SHLD A136					.25	NO			
			P2-G25	15				.18	NO		60	
A 136B	14		P8-16/O	7				.23	NO		31, 33	
			SHLD A136					.25	NO			
A 136L			P2-K25	15				.18	NO		28	
			P8-17/O	7			.32	.23	NO		31	
A 136R			P2-H25	15				.18	NO		28	
			P8-17/I	7				.21	NO		32, 34, 35	
A 137	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9
A 137A	17		SHLD A137					.25	NO			
			P2-G21	15				.18	NO		60	
A 137B	14		P8-19/I	7				.21	NO		32, 34, 35	
			SHLD A137					.25	NO			
A 137L			P2-K21	15				.18	NO		28	
			P8-18/O	7			.32	.23	NO		31	
A 137R			P2-H21	15				.18	NO		28	
			P8-18/I	7				.21	NO		32, 34, 35	
A 139	27				5.30	5.00				A,6B	19, 20	SEE NOTE 9
					2.80	2.50				A,6B	19, 20, 33	SEE NOTE 9

SIZE A | CODE IDENT NO. 99974 | 6900143

SCALE NONE | REV LTR A | SHEET 53 OF 71

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CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 139A	17		SHLD A139					.25	NO			
			P2-G22	15				.18	NO		60	
A 139B	14		P8-19/O	7				.23	NO		31, 33	
			SHLD A139					.25	NO			
A 139L			P2-K22	15				.18	NO		28	
			P8-20/O	7			.32	.23	NO		31	
A 139R			P2-H22	15				.18	NO		28	
			P8-20/I	7				.21	NO		32, 34, 35	
A 141	14		P12-4/I	18				.21	NO		40, 51, 35	
			P2-F9	15				.18	NO		28	
A 144	27				3.30	3.00				A,6A	33, 19, 20	
					5.30	5.00				B,7	20	
A 144A	17		SHLD A144					.25	NO			
			E2	19				.25	NO			
A 144L			P12-16/O	18			.22	.23	NO		41	
			P2-G28	15				.18	NO		28	
A 144R			P12-16/I	18				.21	NO		35, 40, 51	
			P2-G31	15				.18	NO		28	
A 145	45				3.30	3.00				A,6A	33, 49, 20	SEE NOTE 9
					5.30	5.00				B,7	20	
A 145A	17		SHLD A145					.25	NO			
			E2	19				.25	NO			
A 145W			P12-15/O	18				.23	NO		41	
			P2-G30	15				.18	NO		28	

SIZE A | CODE IDENT NO. 99974 | 6900143

SCALE NONE | REV LTR A | SHEET 54 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	147	45				3.30	3.00				A,6A	49, 58	SEE NOTE 9
						5.30	5.00				B,7	58	
A	147A	17		SHLD A147					.25	NO			
				E2	19				.25	NO			
A	147W			P12-15/I	18				.21	NO		35, 40, 51	
				P2-G29	15				.18	NO		28	
A	154	27				2.80	2.50				B,7	20, 33	
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	154B	14		P3-347	12				.18	NO			SEE NOTE 20
				SHLD A154					.25	NO			
A	154L			P14-34/O	17			.22	.23	NO		41	
				P3-247	12				.18	NO			SEE NOTE 20
A	154R			P14-34/I	17				.21	NO		40, 51, 35	
				P3-147	12				.18	NO			SEE NOTE 20
A	155	27				5.30	5.00				B,7	20, 33	
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	155B	14		P3-647	12				.18	NO			SEE NOTE 20
				SHLD A155					.25	NO			
A	155L			P14-35/O	17			.22	.23	NO		41	
				P3-547	12				.18	NO			SEE NOTE 20
A	155R			P14-35/I	17				.21	NO		40, 51, 35	
				P3-447	12				.18	NO			SEE NOTE 20
A	156	27				5.30	5.00				B,7	20, 33	
						2.80	2.50				A,6B	19, 20	SEE NOTE 9

SIZE A	CODE IDENT NO. 99974	6900143	
SCALE-NONE	REV LTR A		SHEET 55 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	156B	14		P3-349	12				.18	NO			SEE NOTE 20
				SHLD A156					.25	NO			
A	156L			P14-32/O	17			.22	.23	NO		41	
				P3-249	12				.18	NO			SEE NOTE 20
A	156R			P14-32/I	17				.21	NO		40, 51, 35	
				P3-149	12				.18	NO			SEE NOTE 20
A	157	27				5.30	5.00				B,7	20, 33	
						2.80	2.50				A,6B	19, 20	SEE NOTE 9
A	157B	14		P3-649	12				.18	NO			SEE NOTE 20
				SHLD A157					.25	NO			
A	157L			P14-33/O	17			.22	.23	NO		41	
				P3-549	12				.18	NO			SEE NOTE 20
A	157R			P14-33/I	17				.21	NO		40, 51, 35	
				P3-449	12				.18	NO			SEE NOTE 20
A	158	14		P12-2/O	18				.23	NO		41, 33	
				P3-119	12				.18	NO		28	
A	159	14		P12-9/O	18				.23	NO		41, 33	
				P3-422	12				.18	NO		28	
A	164	27				2.80	2.50				B,7	20, 33	
						2.80	2.50				B,7	20	
A	164L			P12-31/O	17			.22	.23	NO		41	
				P13-8	1				.15	NO		30	
A	164R			P12-31/I	17				.21	NO		40, 51, 35	
				P13-7	1				.15	NO		30	

SIZE A	CODE IDENT NO. 99974	6900143	
SCALE-NONE	REV LTR A		SHEET 56 OF 71

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CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	165	27				2.80	2.50				B,7	20, 33	
						5.30	5.00				B,7	20	
A	165L			P12-46/O	18			.22	.23	NO		41	
				P2-A23	15				.18	NO		28	
A	165R			P12-46/I	18				.21	NO		40, 51, 35	
				P2-B23	15				.18	NO		28	
A	171	44				3.30	3.00				B,7	20	
						5.30	5.00				B,7	20	
A	171L			P12-4/O	18			.22	.23	NO		41, 33	
				E14-B	23				.25	NO			
A	171R			P12-33/O	18			.22	.23	NO		41, 33	
				P2-G8	15				.18	NO		61	SEE NOTE 20
A	171Y			P12-33/I	18				.21	NO		40, 51, 35	
				E15	23				.38	NO			
A	284	14		P2-A22	15				.18	NO		28	
				P8-41	7				.18	NO		38	
A	344	16				5.30	5.00				B,7	20	
						3.30	3.00				B,7	20	
A	344L			P2-F14	15				.18	NO		60	
				P1-46	3				.18	NO		39	SEE NOTE 20
A	344R			P2-G14	15				.18	NO		60	
				P1-45	3				.18	NO		39	SEE NOTE 20
A	344Y			P2-D14	15				.18	NO		60	
				P1-44	3				.18	NO		39	SEE NOTE 20

SIZE A	CODE IDENT NO. 99974	6900143	
SCALE-NONE	REV LTR A		SHEET 57 OF

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CABLE ASSEMBLY W133 6900143 A

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	345	15				3.30	3.00				B,7	20	
						3.30	3.00				B,7	20	
A	345L			E11	14				.38	NO			
				P1-26	3				.18	NO			SEE NOTE 20
A	345R			E13	16				.38	NO			
				P1-25	3				.18	NO			SEE NOTE 20
A	346	15				3.80	3.50				B,7	20	
						3.80	3.50				B,7	20	
A	346L			E11	14				.38	NO			
				P1-26	3				.18	NO		38	
A	346R			E13	16				.38	NO			
				P1-25	3				.18	NO		38	
A	347	15				3.80	3.50				B,7	20	
						3.80	3.50				B,7	20	
A	347L			E11	14				.38	NO			
				P1-28	3				.18	NO			SEE NOTE 20
A	347R			E13	16				.38	NO			
				P1-27	3				.18	NO			SEE NOTE 20
A	348	17		P2-A8	15				.18	NO		28	
				E13	16				.38	NO			
A	349	15				5.30	5.00				B,7	20	
						3.80	3.50				B,7	20	
A	349L			P2-G7	15				.18	NO		60	
				P1-19	3				.18	NO			SEE NOTE 20

SIZE A	CODE IDENT NO. 99974	6900143	
SCALE-NONE	REV LTR A		SHEET 58 OF 71

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	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	349R			P2-G6 P1-18	15 3				.18 .18	NO NO		60	SEE NOTE 20
A	350	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A	350L			P2-B7 P1-23	15 3				.18 .18	NO NO		60	SEE NOTE 20
A	350R			P2-B6 P1-22	15 3				.18 .18	NO NO		60	SEE NOTE 20
A	351	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A	351L			P2-F7 P1-21	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A	351R			P2-F6 P1-20	15 3				.18 .18	NO NO		60 38	SEE NOTE 20
A	352	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	
A	352L			P2-A7 P1-21	15 3				.18 .18	NO NO		60	SEE NOTE 20
A	352R			P2-A6 P1-20	15 3				.18 .18	NO NO		60	SEE NOTE 20
A	353	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A	353L			P2-A5 F11	15 14				.18 .38	NO NO		60	

SIZE A | CODE IDENT NO. 99974 | 6900143

SCALE-NONE | REV LTR A | SHEET 59 OF 71

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	353R			P2-A4 E10	15 13				.18 .38	NO NO		60	
A	354	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A	354L			P2-B5 E11	15 14				.18 .38	NO NO		60	
A	354R			P2-B4 E10	15 13				.18 .38	NO NO		60	
A	355	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A	355L			P2-C5 E11	15 14				.18 .38	NO NO		60	
A	355R			P2-C4 E10	15 13				.18 .38	NO NO		60	
A	356	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A	356L			P2-D5 E11	15 14				.18 .38	NO NO		60	
A	356R			P2-D4 E10	15 13				.18 .38	NO NO		60	
A	357	15				5.30 4.30	5.00 4.00				B,7 B,7	20 20	
A	357L			P2-F5 E11	15 14				.18 .38	NO NO		60	

SIZE A | CODE IDENT NO. 99974 | 6900143

SCALE-NONE | REV LTR A | SHEET 60 OF 71

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	357R			P2-F4 E10	15 13				.18 .38	NO NO		60	
A	358	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A	358A	17		SHLD A358 E4					.25 .38	NO NO			
A	358B	17		P5-42 SHLD A358	4				.15 .25	NO NO		30	
A	358L			P3-337 P5-41	12 4				.18 .15	NO NO		60 30	
A	358R			P3-237 P5-40	12 4				.18 .15	NO NO		60 30	
A	359	15				5.30 2.60	5.00 2.30				A,6B A,6B	19, 20 19, 20	
A	359A	17		SHLD A359 E4					.25 .38	NO NO			
A	359B	17		P5-45 SHLD A359	4				.15 .25	NO NO		30	
A	359L			P3-537 P5-44	12 4				.18 .15	NO NO		60 30	
A	359R			P3-437 P5-43	12 4				.18 .15	NO NO		60 30	
A	360	14		P3-611 P9-33/0	12 6				.18 .23	NO NO		28 41, 33	

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SCALE-NONE | REV LTR A | SHEET 61 OF 71

	LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A	361	15				5.30 2.60	5.00 2.30				B,7 A,6B	20 19, 20	
A	361B	17		P5-81 SHLD A361	4				.15 .25	NO NO		30	
A	361L			P2-K15 P5-83	15 4				.18 .15	NO NO		60 30	
A	361R			P2-H15 P5-82	15 4				.18 .15	NO NO		60 30	
A	365	14		P14-48/I P1-12	18 3				.21 .18	NO NO		40, 51, 35 38	
A	366	17		P3-236 E12	12 11				.18 .38	NO NO		60	
A	367	17		P3-436 E12	12 11				.18 .38	NO NO		60	
A	385	53				3.80 3.80	3.50 3.50				B,7 B,7	59 59	
A	385L			P10-B E11	10 14				.28 .38	YES NO			
A	385R			P10-A E10	10 13				.28 .38	YES NO			
A	387	18		P10-H E13	10 16				.28 .38	YES NO			
A	397	15				5.30 3.80	5.00 3.50				B,7 B,7	20 20	

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SCALE-NONE | REV LTR A | SHEET 62 OF 71

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 397L			P2-K12	15				.18	NO		60	
			P1-42	3				.18	NO			SEE NOTE 20
A 397R			P2-H12	15				.18	NO		60	
			P1-41	3				.18	NO			SEE NOTE 20
A 398	16				5.30	5.00				8,7	20	
					3.80	3.50				8,7	20	
A 398L			P2-F11	15				.18	NO		60	
			P1-34	3				.18	NO			SEE NOTE 20
A 398R			P2-D11	15				.18	NO		60	
			P1-32	3				.18	NO			SEE NOTE 20
A 398Y			P2-G11	15				.18	NO		60	
			P1-33	3				.18	NO			SEE NOTE 20
A 399	16				5.30	5.00				8,7	20	
					3.80	3.50				8,7	20	
A 399L			P2-F13	15				.18	NO		60	
			P1-46	3				.18	NO			SEE NOTE 20
A 399R			P2-D13	15				.18	NO		60	
			P1-44	3				.18	NO			SEE NOTE 20
A 399Y			P2-G13	15				.18	NO		60	
			P1-45	3				.18	NO			SEE NOTE 20
A 417	14		P14-48/O	18			.22	.23	NO		41, 33	
			P1-13	3				.18	NO		38	
A 420	14		P2-G20	15				.18	NO		28	
			P8-44/I	7				.21	NO		32, 34, 35	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 421	14		P2-H20	15				.18	NO		28	
			P8-44/O	7				.23	NO		31, 33	
A 424	17		P2-G18	15				.18	NO		60	
			P4-22	2				.18	NO		38	
A 426	18		P10-M	10				.28	YES			
			E12	11				.38	NO			
A 442	27				3.80	3.50				8,7	19, 20, 33	SEE NOTE 9
					5.30	5.00				A,6B	20	
A 442B	14		P3-646	12				.18	NO			SEE NOTE 20
			SHLD A442					.25	NO			
A 442L			P12-24/O	18			.22	.23	NO		41	
			P3-546	12				.18	NO			SEE NOTE 20
A 442R			P12-24/I	18				.21	NO		40, 51, 35	
			P3-446	12				.18	NO			SEE NOTE 20
A 443	27				3.80	3.50				8,7	19, 20, 33	SEE NOTE 9
					5.30	5.00				A,6B	20	
A 443B	14		P3-348	12				.18	NO			SEE NOTE 20
			SHLD A443					.25	NO			
A 443L			P12-25/O	18			.22	.23	NO		41	
			P3-248	12				.18	NO			SEE NOTE 20
A 443R			P12-25/I	18				.21	NO		40, 51, 35	
			P3-148	12				.18	NO			SEE NOTE 20
A 444	27				3.80	3.50				8,7	19, 20, 33	SEE NOTE 9
					5.30	5.00				A,6B	20	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 444B	14		P3-648	12				.18	NO			SEE NOTE 20
			SHLD A444					.25	NO			
A 444L			P12-26/O	18			.22	.23	NO		41	
			P3-548	12				.18	NO			SEE NOTE 20
A 444R			P12-26/I	18				.21	NO		40, 51, 35	
			P3-448	12				.18	NO			SEE NOTE 20
A 445	27				3.80	3.50				8,7	19, 20, 33	SEE NOTE 9
					5.30	5.00				A,6B	20	
A 445B	14		P3-346	12				.18	NO			SEE NOTE 20
			SHLD A445					.25	NO			
A 445L			P12-23/O	18			.22	.23	NO		41	
			P3-246	12				.18	NO			SEE NOTE 20
A 445R			P12-23/I	18				.21	NO		40, 51, 35	
			P3-146	12				.18	NO			SEE NOTE 20
A 446	18		P10-E	10				.28	YES			
			E10	13				.38	NO			
A 449	18		P10-G	10				.28	YES			
			E11	14				.38	NO			
A 450	18		P10-N	10				.28	YES			
			E11	14				.38	NO			
A 453	18		P10-U	10				.28	YES			
			P10-C*	10				.28	YES			
A 454	18		P10-F	10				.28	YES			
			E13	16				.38	NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 455	15				5.30	5.00				A,6A	19, 20	
					2.60	2.30				A,6B	19, 20	
A 455A	17		SHLD A455					.25	NO			
			E4	22				.38	NO			
A 455B	17		P5-27	4				.15	NO		30	
			SHLD A455					.25	NO			
A 455L			P3-233	12				.18	NO		60	
			P5-26	4				.15	NO		30	
A 455R			P3-133	12				.18	NO		60	
			P5-25	4				.15	NO		30	
A 456	15				5.30	5.00				8,7	20	
					2.60	2.30				8,7	20	
A 456L			P2-G16	15				.18	NO		60	
			P5-80	4				.15	NO		30	
A 456R			P2-H16	15				.18	NO		60	
			P5-79	4				.15	NO		30	
A 457	44				5.30	5.00				8,7	20	
					3.30	3.00				8,7	20	
A 457L			E14-8	23				.25	NO			
			P11-9	9				.15	NO		29	
A 457R			P2-G8	15				.18	NO			SEE NOTE 20
			P11-7	9				.15	NO		29	
A 457Y			E15	23				.38	NO			
			P11-8	9				.15	NO		29	

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 458	18		E1 E3	21 20				.25 .25	NO NO			
A 459	18		E2 E3	19 20				.25 .25	NO NO			
A 460	18		E3 P12-44	20 18				.25 .25	NO NO		 36	
A 461	17		P9-55 P3-438	6 12				.21 .18	NO NO		37 60	
A 462	17		E4	22				.38	NO			
A 463	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 463L			P11-66 E14-B	9 23				.15 .25	NO NO		29	
A 463R			P11-65 P2-A27	9 15				.15 .18	NO NO		29 60	
A 464	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	
A 464L			P11-68 E14-B	9 23				.15 .25	NO NO		29	
A 464R			P11-67 P2-A29	9 15				.15 .18	NO NO		29 60	
A 465	15				4.80 4.80	4.50 4.50				B,7 B,7	20 20	

SIZE A | CODE IDENT NO. 99974 | 6900143

SCALE-NONE | REV LTR A | SHEET 67 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 465L			P11-70 E14-B	9 23				.15 .25	NO NO		29	
A 465R			P11-69 P2-A31	9 15				.15 .18	NO NO		29 60	
A 466	14		P2-H17 P8-42/0	15 7				.25 .23	NO NO		28 31, 34, 35	
A 467	17		P6-37 P6-38	5 5				.15 .15	NO NO		29 29	
A 468	14		P1-50/I P1-50/0	3 3				.21 .23	NO NO		31, 33 32, 34, 35	
A 469	14		P9-40/I P3-522	6 12				.21 .18	NO NO		40, 51, 35 28	
A 470	14		P9-40/0 P3-622	6 12				.23 .18	NO NO		41, 33 28	
A 471	17		P2-K4 E13	15 16				.18 .38	NO NO		60	
A 472	17		P2-C8 P1-2	15 3				.18 .18	NO NO		60 38	
A 473	17		P2-B8 P1-55	15 3				.18 .18	NO NO		60 38	
A 475	17		E14-B P2-G9	23 15				.25 .18	NO NO		 60	
A 476	17		P12-12/0 P2-B27	18 15				.23 .18	NO NO		41, 33 60	

SIZE A | CODE IDENT NO. 99974 | 6900143

SCALE-NONE | REV LTR A | SHEET 68 OF 71

MIL 2084 9-65

CABLE ASSEMBLY W133 6900143 A

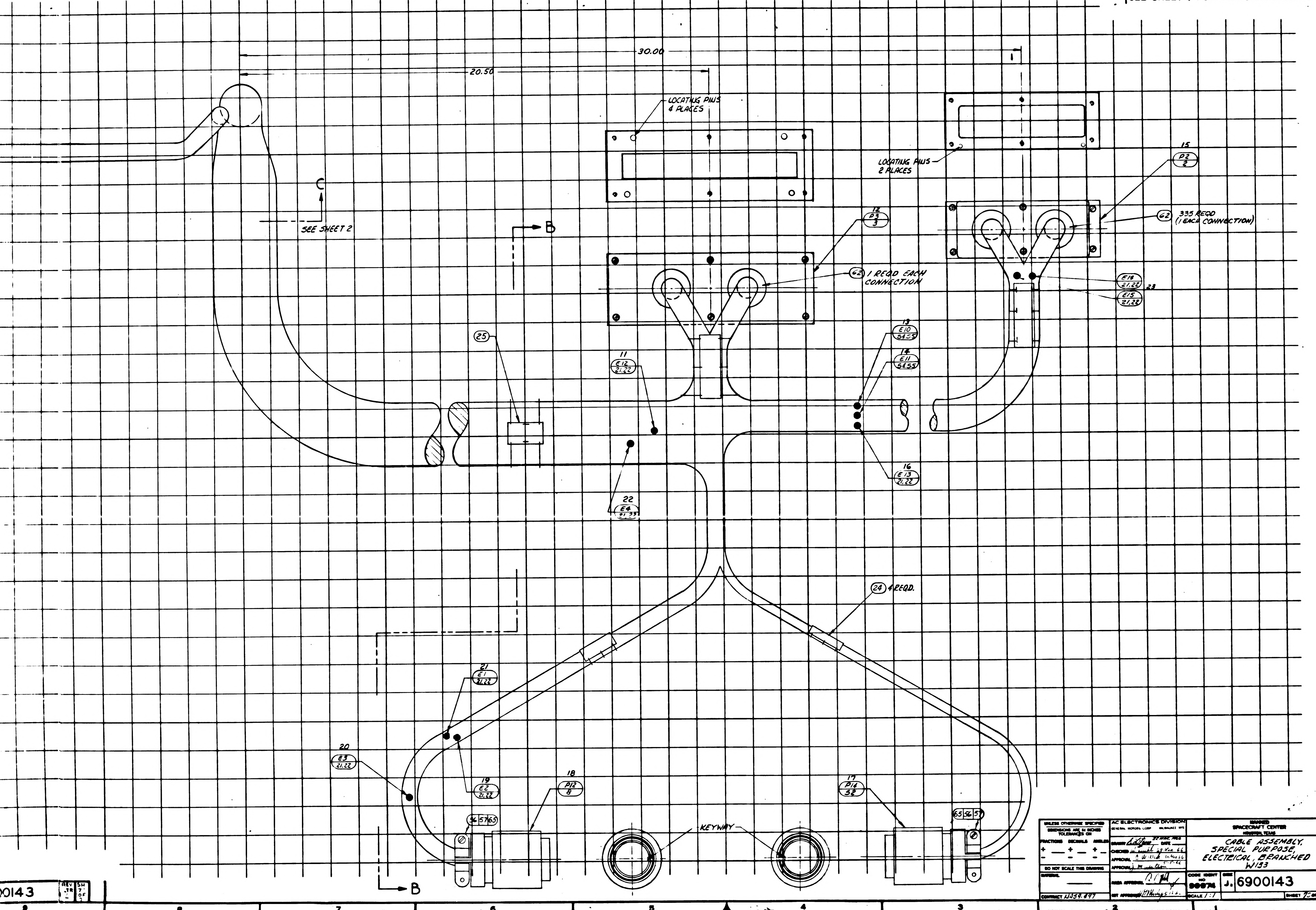
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE. FIG	ACCESSORY ITEMS	REMARKS
A 477	14		P12-12/I P2-B29	18 15				.21 .18	NO NO		51, 40, 35 60	
A 478	14		P12-14/I P2-B31	18 15				.21 .18	NO NO		51, 40, 35 60	
A 479	17		P12-14/0 E14-B	18 23				.23 .25	NO NO		41, 33	
A 480	18		E13 E15	23 23				.38 .38	NO NO			
A 481	17		P2-H18 P4-54	15 2				.18 .21	NO NO		60 38	

SIZE A | CODE IDENT NO. 99974 | 6900143

SCALE-NONE | REV LTR A | SHEET 69 OF 71

MIL 2084 9-65

SEE SHEET 1 FOR REVISION RECORD



30.00
20.50
1
LOCATING PINS 4 PLACES
LOCATING PINS 2 PLACES
C
SEE SHEET 2
B
15 P2 2
12 P3 3
62 335 REQD (1 EACH CONNECTION)
62 1 REQD EACH CONNECTION
E16 21,22
23
E15 21,22
25
11 E12 21,22
13 E10 54,55
14 E11 54,55
16 E13 21,22
22 E4 21,22
24 4 REQD.
21 E1 21,22
20 E3 21,22
19 E2 21,22
18 P12 8
17 P16 58
54 57 65
65 56 57
KEYWAY
B

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ___ ± ___ ± ___	AC ELECTRONICS DIVISION GENERAL MOTORS CORP MILWAUKEE WIS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN E. Lifson DATE 22 MAR 1966 CHECKED 29 Mar 66 APPROVAL 30 Mar 66 APPROVAL 5-5-66	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED W133
MATERIAL ___	NASA APPROVAL	CODE IDENT NO 99974 — SIZE J. — 6900143
CONTRACT NAS9-497	MIT APPROVAL 5-12-66	SCALE 1:1 — SHEET 7 OF 7

6900143 A

00143 REV SH 7 OF 7

2/6900143

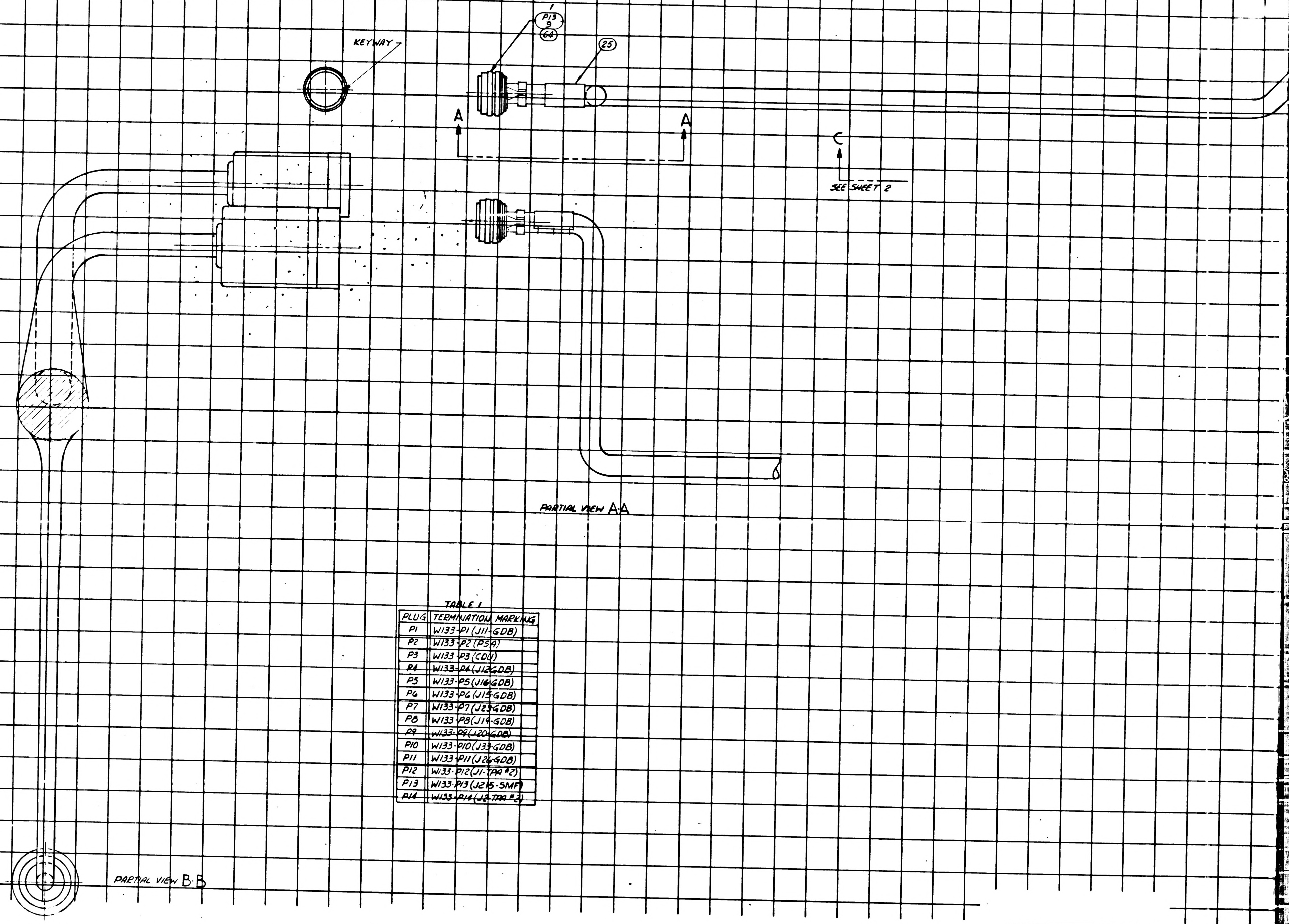
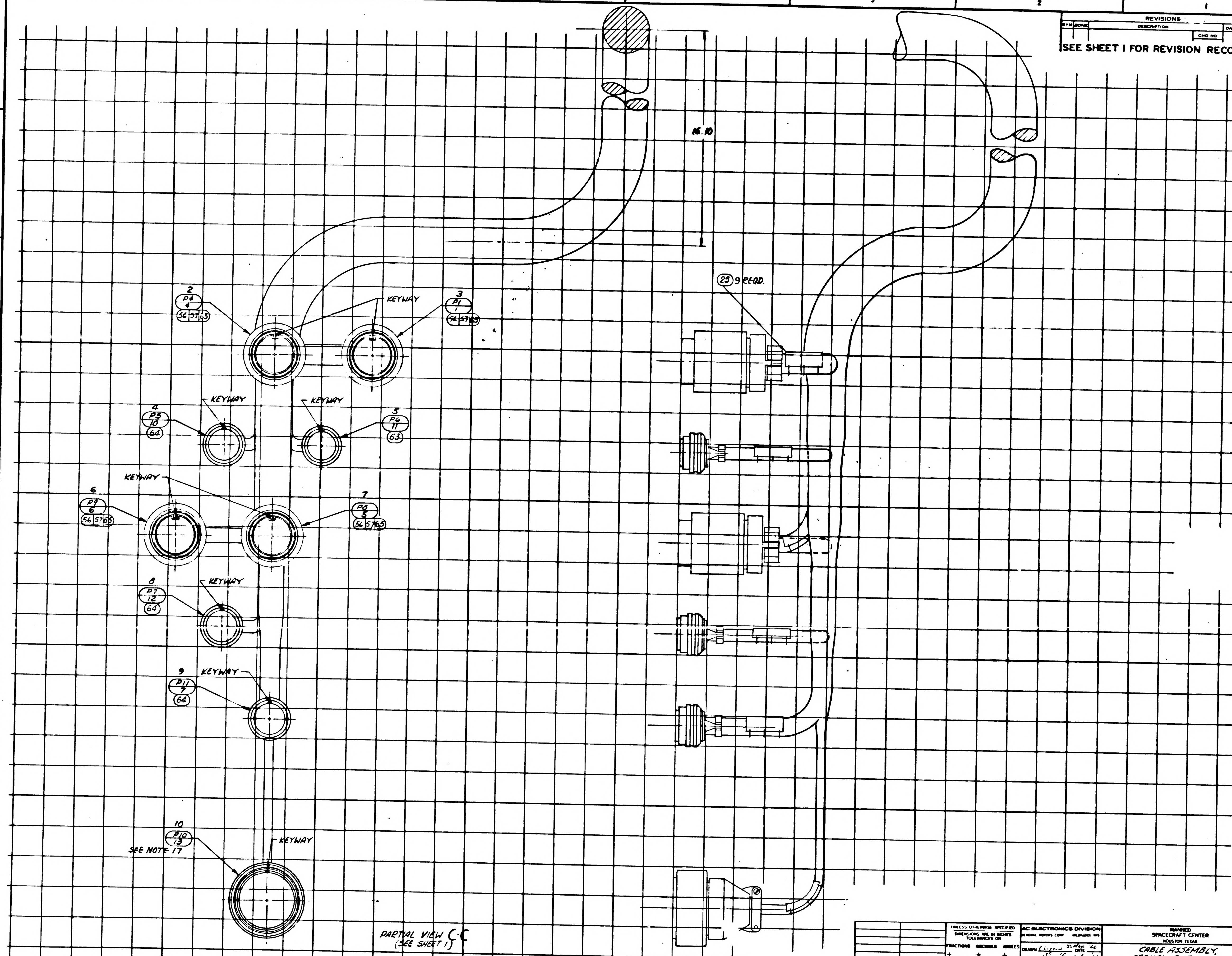

KEYWAY
1
P13
9
64
25
A
A
C
SEE SHEET 2
PARTIAL VIEW A-A
PARTIAL VIEW B-B

TABLE I

PLUG	TERMINATION MARKING
P1	W133-P1 (J11-GDB)
P2	W133-P2 (PSA)
P3	W133-P3 (CDU)
P4	W133-P4 (J12-GDB)
P5	W133-P5 (J16-GDB)
P6	W133-P6 (J15-GDB)
P7	W133-P7 (J23-GDB)
P8	W133-P8 (J19-GDB)
P9	W133-P9 (J20-GDB)
P10	W133-P10 (J33-GDB)
P11	W133-P11 (J26-GDB)
P12	W133-P12 (J1-TAA #2)
P13	W133-P13 (J215-SMF)
P14	W133-P14 (J2-TAA #2)

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO		

SEE SHEET 1 FOR REVISION RECORD


16.10
2
P4
4
56 57 63
KEYWAY
3
P1
1
56 57 63
25 9 REQD.
4
P5
10
64
KEYWAY
KEYWAY
5
P6
11
63
KEYWAY
6
P9
6
56 57 65
7
P8
5
56 57 65
8
P7
12
64
KEYWAY
9
KEYWAY
P11
7
64
10
P10
13
SEE NOTE 17
KEYWAY

PARTIAL VIEW C-C
(SEE SHEET 1)

6900043-031	6900043-031
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN E. Lizzano 22 Mar '66 DATE
CHECKED W. [illegible] 29 Mar 66
APPROVAL C. W. Wise 30 Mar 66
APPROVAL J. M. Watson 5-5-66
NASA APPROVAL
MIT APPROVAL [illegible] 5-?-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CABLE ASSEMBLY,
SPECIAL PURPOSE
ELECTRICAL BRANCHED
W 133

CODE IDENT NO	SIZE	
99974	E	6900143
SCALE 1:1		SHEET 71 OF 71

6900143 A

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	LTR	DESCRIPTION	DATE	APPROVED
6900088-011	6900088-011	A	INITIAL RELEASE CLASS A PER TDRR 30098	20 JUN '66	JS

REV	A	A	A	A	A	A	A	A	A	A	A									
SHEET	21	22	23	24	25	26	27	28	29	30	31									
REV STATUS OF SHEETS — REV		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

DRAFTSMAN R. TURNER 31 MAR 66
DAY MO YR
CHECKER 29 APR 66
ENGINEER
APPROVAL
CONTR NO. NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RUNNING LIST (LEM PSAAM)

SIZE A
CODE IDENT. NO 99974
6900146
SCALE NONE
SHEET 1 OF 31

MIL 1977A6 12-65

---

888 RUNNING LIST 6900146 10

PENNANT NOTE	GENERAL NOTES
1	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER - A - SHIELD LEAD ON FROM END L - WHITE WITH BLUE TRACER. R - WHITE WITH RED TRACER.
3	ALL PART NUMBERS ARE FOR REFERENCE ONLY.
4	PARTIAL REFERENCE DESIGNATIONS ARE SHOWN----PREFIX WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
5	DRAWINGS FOR REF 2901155 SCHEMATIC DIAGRAM ELECTRICAL, GLITCH DETECTOR. 2900988 SCHEMATIC DIAGRAM ELECTRICAL, PHASE DIFFERENCE CIRCUIT. 6900107 SCHEMATIC DIAGRAM ELECTRICAL, ATTENUATOR BOARD 1902448 SCHEMATIC DIAGRAM ELECTRICAL, LINE DRIVE AMPLIFIER 1902451 SCHEMATIC DIAGRAM ELECTRICAL, AC AMPLIFIER. 6900089 WIRING HARNESS A 6900138 LEAD SET AA 6900131 SCHEMATIC DIAGRAM ELECTRICAL, PSA ADAPTER MODULE (LEM) 6900088 PSA ADAPTER MODULE (LEM)
6	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER
7	WIRING END OF ELECTRICAL PARTS AND SOCKETS SHOWN. FRONT FACE OF PIN CONNECTORS SHOWN, SOCKET CONNECTORS OPPOSITE

SIZE A
CODE IDENT NO. 99974
6900146
SCALE-NONE REV LTR A SHEET 2 OF 31

MIL 2084 8-65

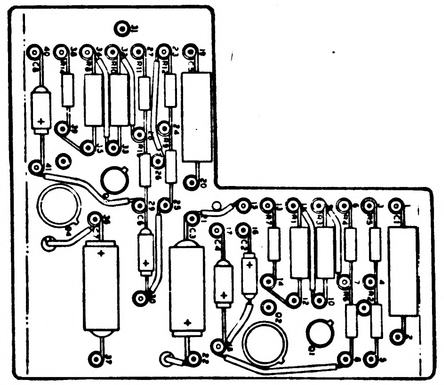


FIGURE 1 A2 THRU A9
1902433-011 AC AMPLIFIER
1902451 SCHEMATIC

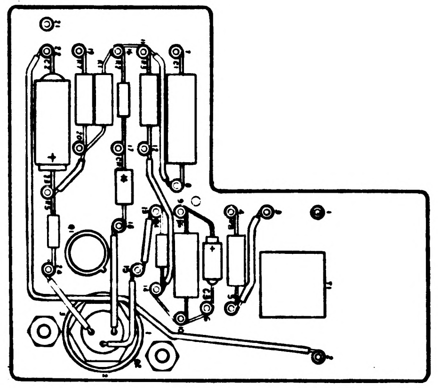


FIGURE 2 A10
1902434-011 LINE DRIVE AMPL.
1902448 SCHEMATIC

SIZE A
CODE IDENT. NO. 99974
6900146
SCALE NONE REV LTR A SHEET 3 OF 31

MIL 2084 8-65

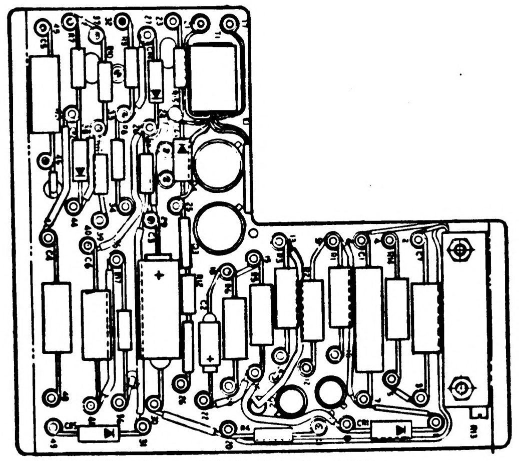


FIGURE 3 A12 THRU A17
2901154-011 GLITCH DETECTOR
2901155 SCHEMATIC

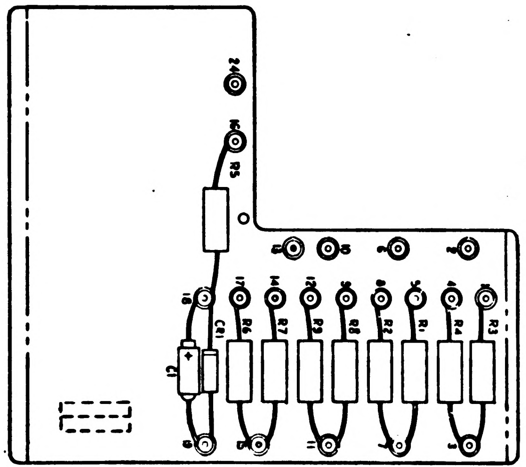


FIGURE 4 A18
6900141-011 ATTENUATOR ASSY
6900107 SCHEMATIC

SIZE A
CODE IDENT. NO. 99974
6900146
SCALE NONE REV LTR A SHEET 4 OF 31

MIL 2084 8-65

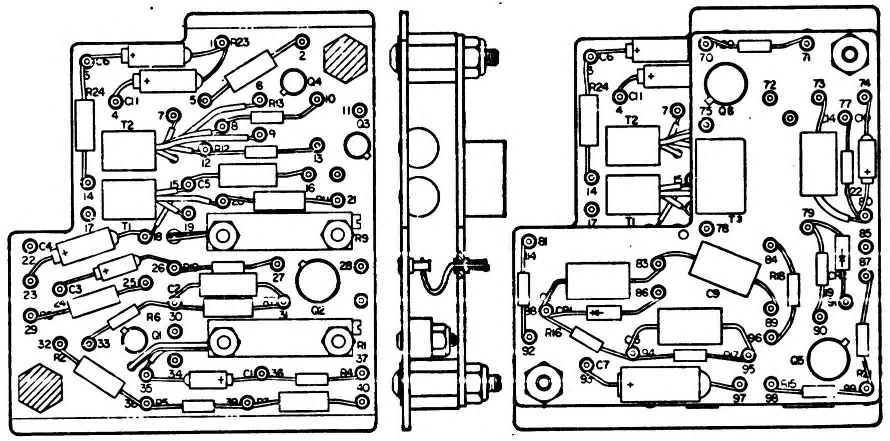


FIGURE 5 A20

2901063-011 PHASE DIFF CKT BD ASSY
2900988 SCHEMATIC

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR A	SHEET 5 OF 31

MIL 2084 8-65

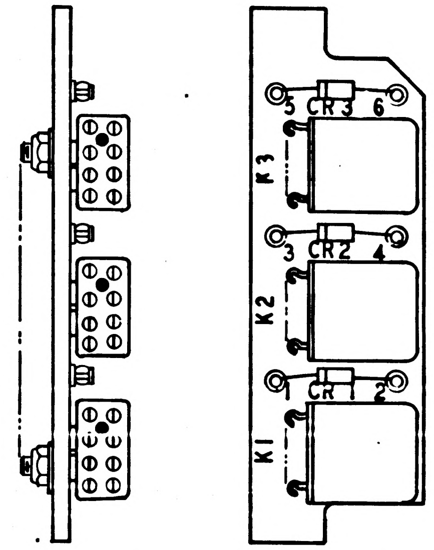

5 CR3 6
K3
3 CR2 4
K2
1 CR1 2
K1

FIGURE 6 A21, A22 & A23
6900118-011
ELECTRONIC COMPONENT ASSY

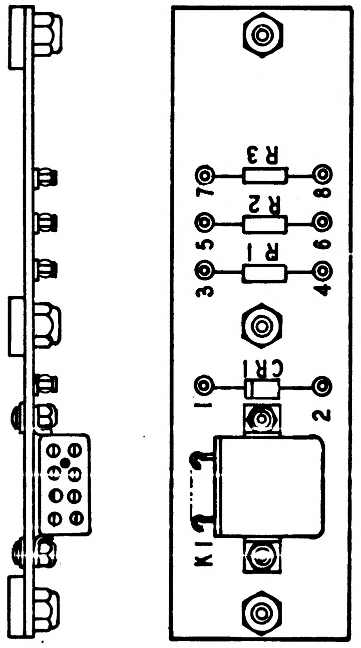

R3
7 R2 8
5 6
3 R1 4
CR1
1 2
K1

FIGURE 7 A24
6900120-011
ELECTRONIC COMPONENT ASSY

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR A	SHEET 6 OF 31

MIL 2084 8-65

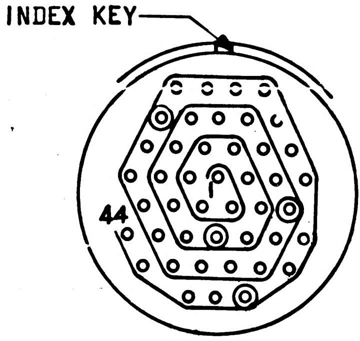

INDEX KEY
44

FIGURE 10
J243
1897252-109

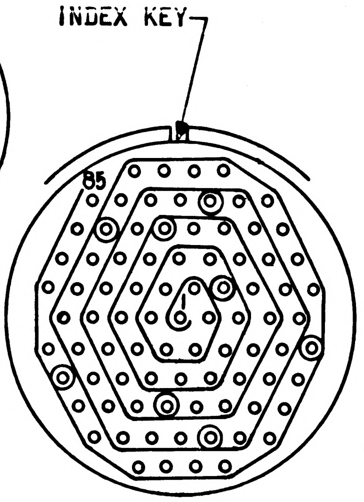

INDEX KEY
85

FIGURE 8
J1
6900132

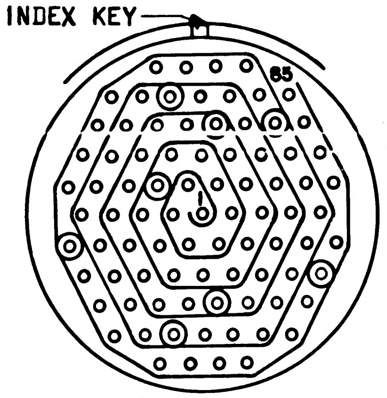

INDEX KEY
85

FIGURE 11
J244
1897247-001

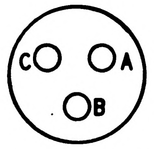


FIGURE 9
J232
MS3102R14S-7S(C) (1896916-107)

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR A	SHEET 7 OF 31

MIL 2084 8-65

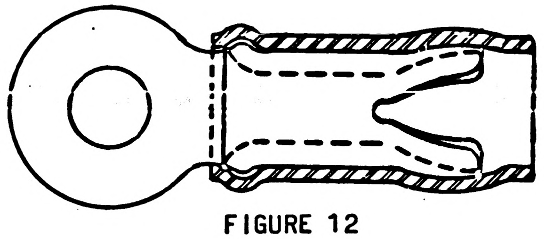


FIGURE 12
E1
1015902-45

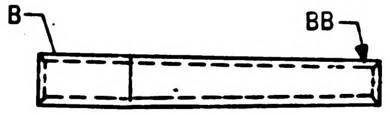


FIGURE 13
E2, E3 & E5
1016006-001

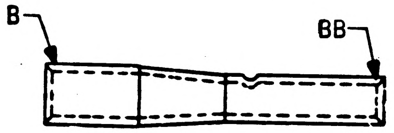


FIGURE 14
E4
1016006-002

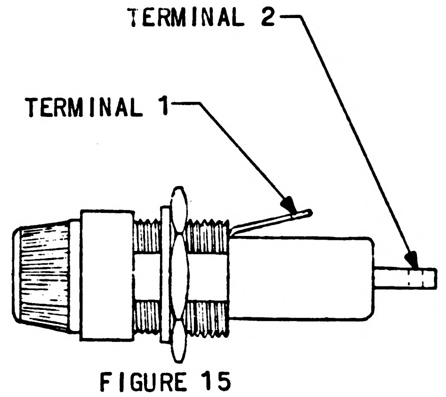
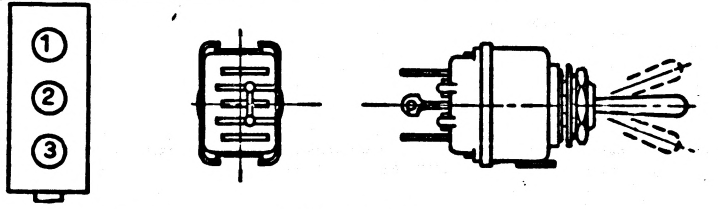

TERMINAL 2
TERMINAL 1

FIGURE 15
XF1
MS26572-1
F1
1897099-025

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR A	SHEET 8 OF 31

MIL 2084 8-65



TERMINAL NUMBERS

FIGURE 16
S1 & S3
1016265-004
S4, S5, & S6
1016265-006

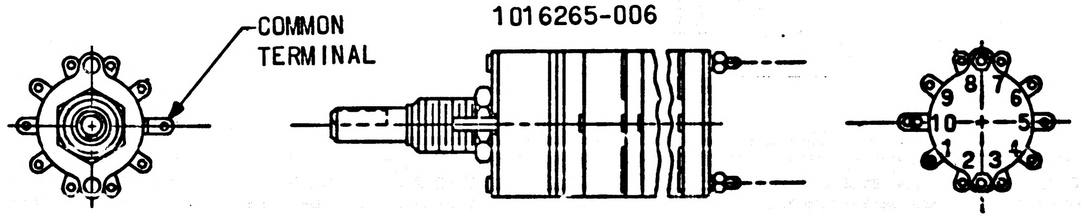


FIGURE 17
S2
1897379-001

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR A	SHEET 9 OF 31

A2 AC AMPLIFIER ASSY 1902433-011 FIG. 1

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A2-1	J1-62	A 173	RRDR TRUN FINE ERROR (CDU) HI		
A2-9	J244-67	A 192	TRUN CDU FINE ERROR LO		
A2-13	A2-38	AA 37	+28 VDC IMU STANDBY HI		
A2-13	A3-38	A 107	+28 VDC IMU STANDBY HI		
A2-15	E4-BB	A 213	CDU TP COM		
A2-17	J244-66	A 191	TRUN CDU FINE ERROR HI		
A2-19	J1-63	A 174	RRDR TRUN COARSE ERROR (CDU) HI		
A2-31	E4-BB	A 144	CDU TP COM		
A2-32	J244-69	A 194	TRUN CDU COARSE ERROR LO		
A2-38	A2-13	AA 37	+28 VDC IMU STANDBY HI		
A2-40	J244-68	A 193	TRUN CDU COARSE ERROR HI		

A3 AC AMPLIFIER ASSY 1902433-011 FIG. 1

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A3-1	J1-37	A 171	RRDR SHAFT FINE ERROR (CDU) HI		
A3-9	J244-63	A 188	SHAFT CDU FINE ERROR LO		
A3-13	A3-38	AA 36	+28 VDC IMU STANDBY HI		
A3-13	A4-38	A 122	+28 VDC IMU STANDBY HI		
A3-15	E4-B	A 211	CDU TP COM		
A3-17	J244-62	A 187	SHAFT CDU FINE ERROR HI		
A3-19	J1-61	A 172	RRDR SHAFT COARSE ERROR (CDU) HI		
A3-31	E4-B	A 212	CDU TP COM		
A3-32	J244-65	A 190	SHAFT CDU COARSE ERROR LO		
A3-38	A3-13	AA 36	+28 VDC IMU STANDBY HI		
A3-38	A2-13	A 107	+28 VDC IMU STANDBY HI		
A3-40	J244-64	A 189	SHAFT CDU COARSE ERROR HI		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR A	SHEET 10 OF 31

A4 AC AMPLIFIER ASSY 1902433-011 FIG. 1

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A4-1	J1-39	A 169	OG FINE ERROR (CDU) HI		
A4-9	J244-57	A 184	OG CDU FINE ERROR LO		
A4-13	A4-38	AA 35	+28 VDC IMU STANDBY HI		
A4-13	A5-38	A 106	+28 VDC IMU STANDBY HI		
A4-15	E4-B	A 209	CDU TP COM		
A4-17	J244-56	A 183	OG CDU FINE ERROR HI		
A4-19	J1-38	A 170	OG COARSE ERROR (CDU) HI		
A4-31	E4-B	A 210	CDU TP COM		
A4-32	J244-59	A 186	OG CDU COARSE ERROR LO		
A4-38	A4-13	AA 35	+28 VDC IMU STANDBY HI		
A4-38	A3-13	A 122	+28 VDC IMU STANDBY HI		
A4-40	J244-58	A 185	OG CDU COARSE ERROR HI		

A5 AC AMPLIFIER ASSY 1902433-011 FIG. 1

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A5-1	J1-19	A 167	MG FINE ERROR (CDU) HI		
A5-9	J244-53	A 180	MG CDU FINE ERROR LO		
A5-13	A5-38	AA 34	+28 VDC IMU STANDBY HI		
A5-13	A6-38	A 105	+28 VDC IMU STANDBY HI		
A5-15	E4-B	A 207	CDU TP COM		
A5-17	J244-52	A 179	MG CDU FINE ERROR HI		
A5-19	J1-20	A 168	MG COARSE ERROR (CDU) HI		
A5-31	E4-B	A 208	CDU TP COM		
A5-32	J244-55	A 182	MG CDU COARSE ERROR LO		
A5-38	A5-13	AA 34	+28 VDC IMU STANDBY HI		
A5-38	A4-13	A 106	+28 VDC IMU STANDBY HI		
A5-40	J244-54	A 181	MG CDU COARSE ERROR HI		

SIZE	CODE IDENT NO.	
A	99974	6900146
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A6 AC AMPLIFIER ASSY 1902433-011 FIG. 1

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A6-1	J1-2	A 165	IG FINE ERROR (CDU) HI		
A6-9	J244-49	A 176	IG CDU FINE ERROR LO		
A6-13	A6-38	AA 33	+28 VDC IMU STANDBY HI		
A6-13	A7-38	A 104	+28 VDC IMU STANDBY HI		
A6-15	E4-B	A 205	CDU TP COM		
A6-17	J244-48	A 175	IG CDU FINE ERROR HI		
A6-19	J1-7	A 166	IG COARSE ERROR (CDU) HI		
A6-31	E4-B	A 206	CDU TP COM		
A6-32	J244-51	A 178	IG CDU COARSE ERROR LO		
A6-38	A6-13	AA 33	+28 VDC IMU STANDBY HI		
A6-38	A5-13	A 105	+28 VDC IMU STANDBY HI		
A6-40	J244-50	A 177	IG CDU COARSE ERROR HI		

A7 AC AMPLIFIER ASSY 1902433-011 FIG. 1

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A7-1	J1-56	A 142	MG ERROR		
A7-9	J244-41	A 152	MG SERVO ERROR TOTAL LO		
A7-13	A7-38	AA 32	+28 VDC IMU STANDBY HI		
A7-13	A8-38	A 103	+28 VDC IMU STANDBY HI		
A7-15	A7-31	AA 38	GIMBAL ERROR LO		
A7-17	J244-40	A 151	MG SERVO ERROR TOTAL HI		
A7-19	J1-80	A 143	OG ERROR		
A7-31	A7-15	AA 38	GIMBAL ERROR LO		
A7-31	A8-31	A 145	GIMBAL ERROR LO		
A7-31	J1-55	A 146	GIMBAL ERROR LO		
A7-32	J244-45	A 154	OG SERVO ERROR TOTAL LO		
A7-38	A7-13	AA 32	+28 VDC IMU STANDBY HI		
A7-38	A6-13	A 104	+28 VDC IMU STANDBY HI		
A7-40	J244-44	A 153	OG SERVO ERROR TOTAL HI		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR A	SHEET 12 OF 31

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
	A8		AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A8-1	A18-2	A 139	BUFFERED 800 CPS 28 V 5 PCT PHASE A		
A8-9	J244-23	A 148	800 CPS 5 PCT 0 DEG SUPPLY LO		
A8-13	A8-38	AA 31	+28 VDC IMU STANDBY HI		
A8-13	A9-38	A 102	+28 VDC IMU STANDBY HI		
A8-15	A18-4	A 140	800 CPS 28 V 5 PCT PHASE B COM		
A8-17	J244-22	A 147	800 CPS 5 PCT 0 DEG SUPPLY HI		
A8-19	J1-81	A 141	IG ERROR		
A8-31	A7-31	A 145	GIMBAL ERROR LO		
A8-32	J244-37	A 150	IG SERVO ERROR TOTAL LO		
A8-38	A8-13	AA 31	+28 VDC IMU STANDBY HI		
A8-38	A7-13	A 103	+28 VDC IMU STANDBY HI		
A8-40	J244-36	A 149	IG SERVO ERROR TOTAL HI		
	A9		AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A9-1	S2-C1	A 19	PIPA G/S OUTPUT SELECTED HI		
A9-9	A10-21	A 23	PIPA G/S OUTPUT LO		
A9-13	A9-38	AA 30	+28 VDC IMU STANDBY HI		
A9-13	A10-19	A 24	+28 VDC IMU STANDBY HI		
A9-15	A18-12	A 25	PIPA G/S OUTPUT SELECTED LO		
A9-17	A10-7	A 22	LINE DRIVE AMP INPUT HI		
A9-19	A18-6	A 137	BUFFERED 800 CPS 28 V 5 PCT PHASE B		
A9-31	A18-8	A 138	800 CPS 28 V 5 PCT PHASE B COM		
A9-32	J244-21	A 134	800 CPS 5 PCT 90 DEG SUPPLY LO		
A9-38	A9-13	AA 30	+28 VDC IMU STANDBY HI		
A9-38	A8-13	A 102	+28 VDC IMU STANDBY HI		
A9-40	J244-20	A 133	800 CPS 5 PCT 90 DEG SUPPLY HI		

SIZE A
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FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
	A10		LINE DRIVE AMPLIFIER ASSY 1902434-011 FIG. 2		
A10-1	J232-B	A 21	PIPA HARDLINE LO		
A10-3	J232-A	A 20	PIPA HARDLINE HI		
A10-7	A9-17	A 22	LINE DRIVE AMP INPUT HI		
A10-19	A9-13	A 24	+28 VDC IMU STANDBY HI		
A10-19	S1-3	A 28	+28 VDC IMU STANDBY HI		
A10-21	A9-9	A 23	PIPA G/S OUTPUT LO		
	A12		GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A12-2	J1-83	A 88	LGC +14 VDC SUPPLY HI		
A12-4	J244-4	A 108	LGC +14 VDC SUPPLY LEVEL HI		
A12-17	J244-6	A 110	LGC +14 VDC SUPPLY NOISE/PEAKS HI		
A12-21	J244-7	A 111	LGC +14 VDC SUPPLY NOISE/PEAKS LO		
A12-23	A13-23	A 101	+28 VDC IMU STANDBY HI		
A12-23	A22K1-8	A 215	+28 VDC IMU STANDBY HI		
A12-37	E3-B	A 81	0 VDC IMU		
A12-42	J244-5	A 109	LGC +14 VDC SUPPLY LEVEL LO		
	A13		GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A13-2	J1-84	A 89	AGC +4 VDC SUPPLY HI		
A13-4	J244-8	A 112	AGC +4 VDC SUPPLY LEVEL HI		
A13-17	J244-10	A 114	LGC +4 VDC SUPPLY NOISE/PEAKS HI		
A13-21	J244-11	A 115	LGC +4 VDC SUPPLY NOISE/PEAKS LO.		
A13-23	A14-23	A 100	+28 VDC IMU STANDBY HI		
A13-23	A12-23	A 101	+28 VDC IMU STANDBY HI		
A13-37	E3-B	A 82	0 VDC IMU		
A13-42	J244-9	A 113	LGC +4 VDC SUPPLY LEVEL		

SIZE A
CODE IDENT NO. 99974
6900146
SCALE-NONE
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FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
	A14		GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A14-2	J1-21	A 90	CDU +4 VDC SUPPLY HI		
A14-4	J244-12	A 116	CDU +4 VDC SUPPLY LEVEL HI		
A14-17	J244-14	A 118	CDU +4 VDC SUPPLY NOISE/PEAKS HI		
A14-21	J244-15	A 119	CDU +4 VDC SUPPLY NOISE/PEAKS LO		
A14-23	A15-23	A 99	+28 VDC IMU STANDBY HI		
A14-23	A13-23	A 100	+28 VDC IMU STANDBY HI		
A14-37	E4-BB	A 214	CDU TP COM		
A14-42	J244-13	A 117	CDU +4 VDC SUPPLY LEVEL LO		
	A15		GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A15-2	J1-42	A 91	IMU OPERATE +28 VDC HI		
A15-4	J244-24	A 120	IMU OPERATE +28 VDC LEVEL HI		
A15-17	J244-26	A 123	IMU OPERATE +28 VDC NOISE/PEAKS HI		
A15-21	J244-27	A 124	IMU OPERATE +28 VDC NOISE/PEAKS LO		
A15-23	A16-23	A 98	+28 VDC IMU STANDBY HI		
A15-23	A14-23	A 99	+28 VDC IMU STANDBY HI		
A15-37	E3-BB	A 83	0 VDC IMU		
A15-42	J244-25	A 121	IMU OPERATE +28 VDC LEVEL LO		
	A16		GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A16-2	J1-41	A 92	+28 VDC IMU STANDBY HI		
A16-4	J244-28	A 125	IMU STANDBY +28 VDC LEVEL HI		
A16-17	J244-30	A 127	IMU STANDBY +28 VDC NOISE/PEAKS HI		
A16-21	J244-31	A 128	+28 VDC IMU STANDBY NOISE/PEAKS LO		
A16-23	A17-23	A 97	+28 VDC IMU STANDBY HI		
A16-23	A15-23	A 98	+28 VDC IMU STANDBY HI		

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FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
(CONT.)	A16		GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A16-37	E3-BB	A 84	0 VDC IMU		
A16-42	J244-29	A 126	IMU STANDBY +28 VDC LEVEL LO		
	A17		GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A17-2	J1-60	A 93	LGC OPERATE +28 VDC HI		
A17-4	J244-32	A 129	LGC OPERATE +28 VDC LEVEL HI		
A17-17	J244-34	A 131	LGC OPERATE +28 VDC NOISE/PEAKS HI		
A17-21	J244-35	A 132	LGC OPERATE +28 VDC NOISE/PEAKS LO		
A17-23	A18-16	A 96	+28 VDC IMU STANDBY HI		
A17-23	A16-23	A 97	+28 VDC IMU STANDBY HI		
A17-37	E3-BB	A 85	0 VDC IMU		
A17-42	J244-33	A 130	LGC OPERATE +28 VDC LEVEL LO		
	A18		ATTENUATOR CIRCUIT BOARD ASSY 6900141-011 FIG. 4		
A18-1	J1-47	A 136	800 CPS 28 V 5 PCT PHASE A HI		
A18-2	A8-1	A 139	BUFFERED 800 CPS 28 V 5 PCT PHASE A		
A18-4	A18-8	AA 39	800 CPS 28 V 5 PCT PHASE B COM		
A18-4	J1-26	A 87	800 CPS 28 V 5 PCT PHASE B COM		
A18-4	A8-15	A 140	800 CPS 28 V 5 PCT PHASE B COM		
A18-5	J1-27	A 135	800 CPS 28 V 5 PCT PHASE B HI		
A18-6	A9-19	A 137	BUFFERED 800 CPS 28 V 5 PCT PHASE A		
A18-8	A18-4	AA 39	800 CPS 28 V 5 PCT PHASE B COM		
A18-8	J244-78	A 86	(IMU BLOWER CURRENT) COMM.		
A18-8	A9-31	A 138	800 CPS 28 V 5 PCT PHASE B COM		
A18-9	J1-65	A 29	3200 CPS 28 V SUPPLY HI		
A18-10	A24K1-3	A 14	BUFFERED 3200 CPS SUPPLY HI		

SIZE A
CODE IDENT NO. 99974
6900146
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(CONT.) A18 ATTENUATOR CIRCUIT BOARD ASSY 6900141-011 FIG. 4

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A18-10	A20-22	A 27	BUFFERED 3200 CPS SUPPLY HI		
A18-12	A9-15	A 25	PIPA G/S OUTPUT SELECTED LO		
A18-12	A20-17	A 26	PIPA G/S OUTPUT SELECTED LO		
A18-13	A23K1-8	A 57	+5 VDC		
A18-14	E2-BB	A 155	TM CURRENT LO		
A18-16	A20-81	A 43	+28 VDC IMU STANDBY HI		
A18-16	A17-23	A 96	+28 VDC IMU STANDBY HI		
A18-17	A23K3-8	A 58	+10 VDC		
A18-24	E5-BB	A 30	PIPA G/S OUTPUT LO		

A20 PHASE DIFFERENTIAL CIRCUIT BOARD ASSY 2901063-011 FIG. 5

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A20-3	J244-76	A 37	PHASE DIFF 3.2 KC SUPPLY LGC SYNC HI		
A20-14	J244-77	A 38	PHASE DIFF 3.2 KC SUPPLY LGC SYNC LO		
A20-17	A18-12	A 26	PIPA G/S OUTPUT SELECTED LO		
A20-22	A18-10	A 27	BUFFERED 3200 CPS SUPPLY HI		
A20-75	J1-45	A 35	3.2K PPS (LGC SYN) HI		
A20-78	J1-69	A 36	3.2K PPS (LGC SYN) LO		
A20-81	A18-16	A 43	+28 VDC IMU STANDBY HI		
A20-81	S1-3	A 45	+28 VDC IMU STANDBY HI		

A21 ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A21K1-1	A21-1	AA 1	Z PIPA SELECT HI		
A21K1-3	S2-5	A 7	Z PIPA G/S OUTPUT HI		
A21K1-3	J1-78	A 8	Z PIPA G/S OUTPUT HI		
A21K1-5	A21-2	AA 2	Z PIPA SELECT LO		
A21K1-8	A21K2-2	AA 3	SELECTED PIPA OUTPUT		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR ~~-~~ A	SHEET 17 OF 31

(CONT.) A21 ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A21K2-1	A21-3	AA 4	Y PIPA SELECT HI		
A21K2-2	A21K1-8	AA 3	SELECTED PIPA OUTPUT		
A21K2-3	S2-4	A 9	Y PIPA G/S OUTPUT HI		
A21K2-3	J1-32	A 10	Y PIPA G/S OUTPUT HI		
A21K2-5	A21-4	AA 5	Y PIPA SELECT LO		
A21K2-8	A21K3-2	AA 6	SELECTED PIPA OUTPUT		
A21K3-1	A21-5	AA 7	X PIPA SELECT HI		
A21K3-2	A21K2-8	AA 6	SELECTED PIPA OUTPUT		
A21K3-3	S2-3	A 11	X PIPA G/S OUTPUT HI		
A21K3-3	J1-33	A 12	X PIPA G/S OUTPUT HI		
A21K3-5	A21-6	AA 8	X PIPA SELECT LO		
A21K3-8	A24K1-2	A 15	SELECTED PIPA G/S OUTPUT		
A21-1	A21K1-1	AA 1	Z PIPA SELECT HI		
A21-1	J243-31	A 1	Z PIPA SELECT HI		
A21-2	A21K1-5	AA 2	Z PIPA SELECT LO		
A21-2	J243-30	A 2	Z PIPA SELECT LO		
A21-3	A21K2-1	AA 4	Y PIPA SELECT HI		
A21-3	J243-29	A 3	Y PIPA SELECT HI		
A21-4	A21K2-5	AA 5	Y PIPA SELECT LO		
A21-4	J243-14	A 4	Y PIPA SELECT LO		
A21-5	A21K3-1	AA 7	X PIPA SELECT HI		
A21-5	J243-13	A 5	X PIPA SELECT HI		
A21-6	A21K3-5	AA 8	X PIPA SELECT LO		
A21-6	J243-28	A 6	X PIPA SELECT LO		

A22 ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A22K1-1	A22-3	AA 13	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K1-1	A22-1	AA 12	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K1-3	S3-2	A 46	INHIBIT COMPUTER PWR FAIL		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR ~~-~~ A	SHEET 18 OF 31

(CONT.) A22 ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A22K1-5	A22-2	AA 15	LGC MARGIN TEST ENABLE RETURN		
A22K1-5	A22-4	AA 18	LGC MARGIN TEST ENABLE RETURN		
A22K1-8	A12-23	A 215	+28 VDC IMU STANDBY HI		
A22K2-1	A22-5	AA 14	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K2-1	A22-3	AA 16	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K2-3	A22K2-7	AA 19	0 VDC AGC		
A22K2-3	J1-59	A 48	0 VDC AGC		
A22K2-4	J243-22	A 49	0 VDC AGC DAC NO. 1		
A22K2-5	A22-4	AA 17	LGC MARGIN TEST ENABLE RETURN		
A22K2-5	A22-6	AA 21	LGC MARGIN TEST ENABLE RETURN		
A22K2-7	A22K2-3	AA 19	0 VDC AGC		
A22K2-8	J243-8	A 50	0 VDC AGC DAC NO. 2		
A22K3-1	A22-5	AA 22	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K3-1	J243-35	A 47	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K3-3	J1-36	A 55	ACE BIAS 2		
A22K3-4	J243-39	A 52	CONTROL 1 (ACE)		
A22K3-5	A22-6	AA 20	LGC MARGIN TEST ENABLE RETURN		
A22K3-5	J243-18	A 51	LGC MARGIN TEST ENABLE RETURN		
A22K3-7	J1-18	A 54	ACE BIAS 1		
A22K3-8	J243-20	A 53	CONTROL 2 (ACE)		
A22-1	A22K1-1	AA 12	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-2	A22K1-5	AA 15	LGC MARGIN TEST ENABLE RETURN		
A22-3	A22K1-1	AA 13	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-3	A22K2-1	AA 16	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-4	A22K2-5	AA 17	LGC MARGIN TEST ENABLE RETURN		
A22-4	A22K1-5	AA 18	LGC MARGIN TEST ENABLE RETURN		
A22-5	A22K2-1	AA 14	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-5	A22K3-1	AA 22	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-6	A22K3-5	AA 20	LGC MARGIN TEST ENABLE RETURN		
A22-6	A22K2-5	AA 21	LGC MARGIN TEST ENABLE RETURN		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR ~~-~~ A	SHEET 19 OF 31

A23 ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A23K1-1	A23-1	AA 24	OG SERVO TEST COMMAND HI		
A23K1-2	S4-2	A 61	MANUAL OG SERVO AMP TEST INPUT		
A23K1-3	S4-1	A 60	OG SERVO AMP TEST INPUT		
A23K1-5	A23-2	AA 25	OG SERVO TEST COMMAND LO		
A23K1-8	A23K2-8	AA 23	MANUAL MG SERVO TEST INPUT		
A23K1-8	A18-13	A 57	+5 VDC		
A23K2-1	A23-3	AA 26	MG SERVO TEST COMMAND HI		
A23K2-2	S5-2	A 66	MANUAL MG SERVO AMP TEST INPUT		
A23K2-3	S5-1	A 65	MG SERVO AMP TEST INPUT		
A23K2-5	A23-4	AA 27	MG SERVO TEST COMMAND LO		
A23K2-8	A23K1-8	AA 23	MANUAL MG SERVO AMP TEST INPUT		
A23K3-1	A23-5	AA 28	IG SERVO TEST COMMAND HI		
A23K3-2	S6-2	A 71	MANUAL IG SERVO AMP TEST INPUT		
A23K3-3	S6-1	A 70	IG SERVO AMP TEST INPUT		
A23K3-5	A23-6	AA 29	IG SERVO TEST COMMAND LO		
A23K3-8	A18-17	A 58	+10 VDC		
A23-1	A23K1-1	AA 24	OG SERVO TEST COMMAND HI		
A23-1	J243-17	A 62	OG SERVO TEST COMMAND HI		
A23-2	A23K1-5	AA 25	OG SERVO TEST COMMAND LO		
A23-2	J243-34	AA 63	OG SERVO TEST COMMAND LO		
A23-3	A23K2-1	AA 26	MG SERVO TEST COMMAND HI		
A23-3	J243-33	A 67	MG SERVO TEST COMMAND HI		
A23-4	A23K2-5	AA 27	MG SERVO TEST COMMAND LO		
A23-4	J243-16	A 68	MG SERVO TEST COMMAND LO		
A23-5	A23K3-1	AA 28	IG SERVO TEST COMMAND HI		
A23-5	J243-15	A 72	IG SERVO TEST COMMAND HI		
A23-6	A23K3-5	AA 29	IG SERVO TEST COMMAND LO		
A23-6	J243-32	A 73	IG SERVO TEST COMMAND LO		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR ~~-~~ A	SHEET 20 OF 31

A24 ELECTRONIC COMPONENTS ASSY 6900120-011 FIG. 7

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A24K1-1	A24-1	AA 9	PIPA REF SELECT HI		
A24K1-2	A21K3-8	A 15	SELECTED PIPA G/S OUTPUT		
A24K1-3	S2-2	A 13	BUFFERED 3200 CPS SUPPLY HI		
A24K1-3	A18-10	A 14	BUFFERED 3200 CPS SUPPLY HI		
A24K1-5	A24-2	AA 10	PIPA REF SELECT LO		
A24K1-8	S2-6	A 18	SELECTED PIPA G/S OUTPUT		
A24-1	A24K1-1	AA 9	PIPA REF SELECT HI		
A24-1	J243-5	A 16	PIPA REF SELECT HI		
A24-2	A24K1-5	AA 10	PIPA REF SELECT LO		
A24-2	J243-6	A 17	PIPA REF SELECT LO		
A24-3	J1-82	A 196	TEMP MON (LGC) HI		
A24-4	J244-70	A 202	LGC TEMPERATURE HI		
A24-5	J1-58	A 198	CAL MOD TEMP HI		
A24-6	J244-72	A 203	CAL MOD TEMP HI		
A24-7	J1-35	A 200	800 CPS POWER SUPPLY TEMP HI		
A24-8	J244-74	A 204	PSA TEMPERATURE HI		

E1 TERMINAL LUG 1015902-45 FIG. 12

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E1	J232-C	A 56	STRUCTURE GRD		
E1	J1-85	A 195	STRUCTURE GRD		

E2 SPLICE REDUCER 1016006-001 FIG. 13

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E2-B	J244-39	A 157	TM CURRENT LO		
E2-B	J244-43	A 158	TM CURRENT LO		
E2-B	J244-47	A 159	TM CURRENT LO		
E2-BB	A18-14	A 155	TM CURRENT LO		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR ~~A~~ A	SHEET 21 OF 31

(CONT.) E2 SPLICE REDUCER 1016006-001 FIG. 13

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E2-BB	J1-52	A 156	TM CURRENT LO		

E3 SPLICE REDUCER 1016006-001 FIG. 13

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E3-B	J1-23	A 78	0 VDC IMU		
E3-B	J244-2	A 79	0 VDC IMU		
E3-B	J244-19	A 80	0 VDC IMU		
E3-B	A12-37	A 81	0 VDC IMU		
E3-B	A13-37	A 82	0 VDC IMU		
E3-BB	A15-37	A 83	0 VDC IMU		
E3-BB	A16-37	A 84	0 VDC IMU		
E3-BB	A17-37	A 85	0 VDC IMU		

E4 SPLICE REDUCER 1016006-002 FIG. 14

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E4-B	A6-15	A 205	CDU TP COM		
E4-B	A6-31	A 206	CDU TP COM		
E4-B	A5-15	A 207	CDU TP COM		
E4-B	A5-31	A 208	CDU TP COM		
E4-B	A4-15	A 209	CDU TP COM		
E4-B	A4-31	A 210	CDU TP COM		
E4-B	A3-15	A 211	CDU TP COM		
E4-B	A3-31	A 212	CDU TP COM		
E4-BB	J1-8	A 95	CDU TP COM		
E4-BB	A2-31	A 144	CDU TP COM		
E4-BB	A2-15	A 213	CDU TP COM		
E4-BB	A14-37	A 214	CDU TP COM		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR ~~A~~ A	SHEET 22 OF 31

E5 SPLICE REDUCER 1016006-001 FIG. 13

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E5-B	J1-79	A 31	PIPA G/S OUTPUT LO		
E5-B	J1-54	A 32	PIPA G/S OUTPUT LO		
E5-B	J1-16	A 33	PIPA G/S OUTPUT LO		
E5-B	J1-64	A 34	PIPA G/S OUTPUT LO		
E5-BB	A18-24	A 30	PIPA G/S OUTPUT LO		

J1 CONNECTOR, RECEPTACLE, ELECTRICAL 6900132 FIG. 8

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J1-2	A6-1	A 165	IG FINE ERROR (CDU) HI		
J1-6	S3-1	A 44	INHIBIT COMPUTER POWER FAIL		
J1-7	A6-19	A 166	IG COARSE ERROR (CDU) HI		
J1-8	E4-BB	A 95	CDU TP COM		
J1-16	E5-B	A 33	PIPA G/S OUTPUT LO		
J1-17	J244-75	A 201	800 CPS POWER SUPPLY TEMPERATURE LO		
J1-18	A22K3-7	A 54	ACE BIAS 1		
J1-19	A5-1	A 167	MG FINE ERROR (CDU) HI		
J1-20	A5-19	A 168	MG COARSE ERROR (CDU) HI		
J1-21	A14-2	A 90	CDU +4 VDC SUPPLY HI		
J1-23	E3-B	A 78	0 VDC IMU		
J1-24	J244-1	A 76	HEATER TELEMETRY DISCRETE		
J1-25	J244-79	A 77	BLOWER TELEMETRY DISCRETE		
J1-26	A18-4	A 87	800 CPS 28 V 5 PCT PHASE B COM		
J1-27	A18-5	A 135	800 CPS 28 V 5 PCT PHASE B HI		
J1-30	J244-42	A 161	MG TORQUE MOTOR CURRENT MON		
J1-31	J244-38	A 160	IG TORQUE MOTOR CURRENT MON		
J1-32	A21K2-3	A 10	Y PIPA G/S OUTPUT HI		
J1-33	A21K3-3	A 12	X PIPA G/S OUTPUT HI		
J1-34	J244-73	A 199	CAL MOD TEMP LO		
J1-35	A24-7	A 200	800 CPS POWER SUPPLY TEMPERATURE HI		
J1-36	A22K3-3	A 55	ACE BIAS 2		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR ~~A~~ A	SHEET 23 OF 31

(CONT.) J1 CONNECTOR, RECEPTACLE, ELECTRICAL 6900132 FIG. 8

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J1-37	A3-1	A 171	RRDR SHAFT FINE ERROR (CDU) HI		
J1-38	A4-19	A 170	OG COARSE ERROR (CDU) HI		
J1-39	A4-1	A 169	OG FINE ERROR (CDU) HI		
J1-41	A16-2	A 92	+28 VDC IMU STANDBY HI		
J1-42	A15-2	A 91	IMU OPERATE +28 VDC HI		
J1-43	J244-18	A 94	-28 VDC TP HI		
J1-45	A20-75	A 35	3.2K PPS (LGC SYNC) HI		
J1-46	SHLD OFA75	A 75A	UPLINK O SHIELD		
J1-47	A18-1	A 136	800 CPS 28 V 5 PCT PHASE A HI		
J1-48	SHLD OFA74	A 74A	UPLINK I SHIELD		
J1-51	J244-46	A 162	OG TORQUE MOTOR CURRENT MON		
J1-52	E2-BB	A 156	TM CURRENT LO		
J1-53	S5-1	A 64	MG SERVO AMP TEST INPUT		
J1-54	E5-B	A 32	PIPA G/S OUTPUT LO		
J1-55	A7-31	A 146	GIMBAL ERROR LO		
J1-56	A7-1	A 142	MG ERROR		
J1-57	J244-71	A 197	TEMP MON 1 (LGC) LO		
J1-58	A24-5	A 198	CAL MOD TEMP HI		
J1-59	A22K2-3	A 48	0 VDC AGC		
J1-60	A17-2	A 93	LGC OPERATE +28 VDC HI		
J1-61	A3-19	A 172	RRDR SHAFT COARSE ERROR (CDU) HI		
J1-62	A2-1	A 173	RRDR TRUN FINE ERROR (CDU) HI		
J1-63	A2-19	A 174	RRDR TRUN COARSE ERROR (CDU) HI		
J1-64	E5-B	A 34	PIPA G/S OUTPUT LO		
J1-65	A18-9	A 29	3200 CPS 28 V SUPPLY HI		
J1-66	XF1-2	A 39	+28 VDC IMU STANDBY HI		
J1-67	XF1-2	A 40	+28 VDC IMU STANDBY HI		
J1-68	XF1-2	A 41	+28 VDC IMU STANDBY HI		
J1-69	A20-78	A 36	3.2K PPS (LGC SYNC) LO		
J1-70	J243-43	A 75L	UPLINK O HI		
J1-71	J243-44	A 75R	UPLINK O LO		
J1-72	J243-42	A 74L	UPLINK I HI		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR ~~A~~ A	SHEET 24 OF 31

(CONT.) J1 CONNECTOR, RECEPTACLE, ELECTRICAL 6900132 FIG. 8

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J1-73	J243-24	A 74R	UPLINK I LO	C P DIFFERENT	
J1-74	J244-60	A 163	IRIG TEMPERATURE HI		
J1-75	J244-61	A 164	IRIG TEMPERATURE LO		
J1-76	S4-1	A 59	OG SERVO AMP TEST INPUT		
J1-77	S6-1	A 69	IG SERVO AMP TEST INPUT		
J1-78	A21K1-3	A 8	Z PIPA G/S OUTPUT HI		
J1-79	E5-B	A 31	PIPA G/S OUTPUT LO		
J1-80	A7-19	A 143	OG ERROR		
J1-81	A8-19	A 141	IG ERROR		
J1-82	A24-3	A 196	TEMP MON (LGC) HI		
J1-83	A12-2	A 88	LGC +14 VDC SUPPLY HI		
J1-84	A13-2	A 89	LGC +4 VDC SUPPLY HI		
J1-85	E1	A 195	STRUCTURE GROUND		

J232 CONNECTOR, RECEPTACLE, ELECTRICAL MS3102R14S-7S(C) FIG. 9

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J232-A	A10-3	A 20	PIPA HARDLINE HI		
J232-B	A10-1	A 21	PIPA HARDLINE LO		
J232-C	E1	A 56	STRUCTURE GRD		

J243 CONNECTOR, RECEPTACLE, ELECTRICAL 1897252-109 FIG. 10

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J243-5	A24-1	A 16	PIPA REF SELECT HI		
J243-6	A24-2	A 17	PIPA REF SELECT LO		
J243-8	A22K2-8	A 50	0 VDC AGC DAC NO. 2		
J243-13	A21-5	A 5	X PIPA SELECT HI		
J243-14	A21-4	A 4	Y PIPA SELECT LO		
J243-15	A23-5	A 72	IG SERVO TEST COMMAND HI		

SIZE	CODE IDENT NO.		
A	99974	6900146	
SCALE-NONE	REV LTR ~~-~~ A	SHEET 25 OF 31	

(CONT.) J243 CONNECTOR, RECEPTACLE, ELECTRICAL 1897252-109 FIG. 10

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J243-16	A23-4	A 68	MG SERVO TEST COMMAND LO		
J243-17	A23-1	A 62	OG SERVO TEST COMMAND HI		
J243-18	A22K3-5	A 51	LGC MARGIN TEST ENABLE RETURN		
J243-20	A22K3-8	A 53	CONTROL 2 (ACE)		
J243-22	A22K2-4	A 49	0 VDC AGC DAC NO. 1		
J243-24	J1-73	A 74R	UPLINK 1 LO		
J243-28	A21-6	A 6	X PIPA SELECT LO		
J243-29	A21-3	A 3	Y PIPA SELECT HI		
J243-30	A21-2	A 2	Z PIPA SELECT LO		
J243-31	A21-1	A 1	Z PIPA SELECT HI		
J243-32	A23-6	A 73	IG SERVO TEST COMMAND LO		
J243-33	A23-3	A 67	MG SERVO TEST COMMAND HI		
J243-34	A23-2	A 63	OG SERVO TEST COMMAND LO		
J243-35	A22K3-1	A 47	LGC MARGIN TEST ENABLE HI (+28 VDC)		
J243-39	A22K3-4	A 52	CONTROL 1 (ACE)		
J243-42	J1-72	A 74L	UPLINK 1 HI		
J243-43	J1-70	A 75L	UPLINK 0 HI		
J243-44	J1-71	A 75R	UPLINK 0 LO		

J244 CONNECTOR, RECEPTACLE, ELECTRICAL 1897247-001 FIG. 11

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J244-1	J1-24	A 76	HEATER TELEMETRY DISCRETE		
J244-2	E3-B	A 79	0 VDC IMU		
J244-4	A12-4	A 108	LGC +14 VDC SUPPLY LEVEL HI		
J244-5	A12-42	A 109	LGC +14 VDC SUPPLY LEVEL LO		
J244-6	A12-17	A 110	LGC +14 VDC SUPPLY NOISE/PEAKS HI		
J244-7	A12-21	A 111	LGC +14 VDC SUPPLY NOISE/PEAKS LO		
J244-8	A13-4	A 112	LGC +4 VDC SUPPLY LEVEL HI		
J244-9	A13-42	A 113	LGC +4 VDC SUPPLY LEVEL LO		
J244-10	A13-17	A 114	LGC +4 VDC SUPPLY NOISE/PEAKS HI		

SIZE	CODE IDENT NO.		
A	99974	6900146	
SCALE-NONE	REV LTR ~~-~~ A	SHEET 26 OF 31	

(CONT.) J244 CONNECTOR, RECEPTACLE, ELECTRICAL 1897247-001 FIG. 11

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J244-11	A13-21	A 115	LGC +4 VDC SUPPLY NOISE/PEAKS LO		
J244-12	A14-4	A 116	CDU +4 VDC SUPPLY LEVEL HI		
J244-13	A14-42	A 117	CDU +4 VDC SUPPLY LEVEL LO		
J244-14	A14-17	A 118	CDU +4 VDC SUPPLY NOISE/PEAKS HI		
J244-15	A14-21	A 119	CDU +4 VDC SUPPLY NOISE/PEAKS LO		
J244-18	J1-43	A 94	-28 VDC T.P. HI		
J244-19	E3-B	A 80	-28 VDC T.P. LO		
J244-20	A9-40	A 133	800 CPS 5 PCT 90 DEG SUPPLY HI		
J244-21	A9-32	A 134	800 CPS 5 PCT 90 DEG SUPPLY LO		
J244-22	A8-17	A 147	800 CPS 5 PCT 0 DEG SUPPLY HI		
J244-23	A8-9	A 148	800 CPS 5 PCT 0 DEG SUPPLY LO		
J244-24	A15-4	A 120	IMU OPERATE +28 VDC LEVEL HI		
J244-25	A15-42	A 121	IMU OPERATE +28 VDC LEVEL LO		
J244-26	A15-17	A 123	IMU OPERATE +28 VDC NOISE/PEAKS HI		
J244-27	A15-21	A 124	IMU OPERATE +28 VDC NOISE/PEAKS LO		
J244-28	A16-4	A 125	IMU STANDBY +28 VDC LEVEL HI		
J244-29	A16-42	A 126	IMU STANDBY +28 VDC LEVEL LO		
J244-30	A16-17	A 127	IMU STANDBY +28 VDC NOISE/PEAKS HI		
J244-31	A16-21	A 128	IMU STANDBY +28 VDC NOISE/PEAKS LO		
J244-32	A17-4	A 129	LGC OPERATE +28 VDC LEVEL HI		
J244-33	A17-42	A 130	LGC OPERATE +28 VDC LEVEL LO		
J244-34	A17-17	A 131	LGC OPERATE +28 VDC NOISE/PEAKS HI		
J244-35	A17-21	A 132	LGC OPERATE +28 VDC NOISE/PEAKS LO		
J244-36	A8-40	A 149	IG SERVO ERROR TOTAL HI		
J244-37	A8-32	A 150	IG SERVO ERROR TOTAL LO		
J244-38	J1-31	A 160	IG TORQUE MOTOR CURRENT MON		
J244-39	E2-B	A 157	TM CURRENT LO		
J244-40	A7-17	A 151	MG SERVO ERROR TOTAL HI		
J244-41	A7-9	A 152	MG SERVO ERROR TOTAL LO		
J244-42	J1-30	A 161	MG TORQUE MOTOR CURRENT MON		
J244-43	E2-B	A 158	TM CURRENT LO		
J244-44	A7-40	A 153	OG SERVO ERROR TOTAL HI		

SIZE	CODE IDENT NO.		
A	99974	6900146	
SCALE-NONE	REV LTR ~~-~~ A	SHEET 27 OF 31	

(CONT.) J244 CONNECTOR, RECEPTACLE, ELECTRICAL 1897247-001 FIG. 11

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J244-45	A7-32	A 154	OG SERVO ERROR TOTAL LO		
J244-46	J1-51	A 162	OG TORQUE MOTOR CURRENT MON		
J244-47	E2-B	A 159	TM CURRENT LO		
J244-48	A6-17	A 175	IG CDU FINE ERROR HI		
J244-49	A6-9	A 176	IG CDU FINE ERROR LO		
J244-50	A6-40	A 177	IG CDU COARSE ERROR HI		
J244-51	A6-32	A 178	IG CDU COARSE ERROR LO		
J244-52	A5-17	A 179	MG CDU FINE ERROR HI		
J244-53	A5-9	A 180	MG CDU FINE ERROR LO		
J244-54	A5-40	A 181	MG CDU COARSE ERROR HI		
J244-55	A5-32	A 182	MG CDU COARSE ERROR LO		
J244-56	A4-17	A 183	OG CDU FINE ERROR HI		
J244-57	A4-9	A 184	OG CDU FINE ERROR LO		
J244-58	A4-40	A 185	OG CDU COARSE ERROR HI		
J244-59	A4-32	A 186	OG CDU COARSE ERROR LO		
J244-60	J1-74	A 163	IRIG TEMPERATURE HI		
J244-61	J1-75	A 164	IRIG TEMPERATURE LO		
J244-62	A3-17	A 187	SHAFT CDU FINE ERROR HI		
J244-63	A3-9	A 188	SHAFT CDU FINE ERROR LO		
J244-64	A3-40	A 189	SHAFT CDU COARSE ERROR HI		
J244-65	A3-32	A 190	SHAFT CDU COARSE ERROR LO		
J244-66	A2-17	A 191	TRUN CDU FINE ERROR HI		
J244-67	A2-9	A 192	TRUN CDU FINE ERROR LO		
J244-68	A2-40	A 193	TRUN CDU COARSE ERROR HI		
J244-69	A2-32	A 194	TRUN CDU COARSE ERROR LO		
J244-70	A24-4	A 202	LGC TEMPERATURE HI		
J244-71	J1-57	A 197	TEMP MON 1 (LGC) LO		
J244-72	A24-6	A 203	CAL MOD TEMP HI		
J244-73	J1-34	A 199	CAL MOD TEMP LO		
J244-74	A24-8	A 204	PSA TEMPERATURE HI		
J244-75	J1-17	A 201	800 CPS POWER SUPPLY TEMPERATURE LO		
J244-76	A20-3	A 37	PHASE DIFF-3.2 KC SUPP/LGC SYNC HI		

SIZE	CODE IDENT NO.		
A	99974	6900146	
SCALE-NONE	REV LTR ~~-~~ A	SHEET 28 OF 31	

(CONT.) J244 CONNECTOR, RECEPTACLE, ELECTRICAL 1897247-001 FIG. 11

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J244-77	A20-14	A 38	PHASE DIFF-3.2 KC SUPP/LGC SYNC LO		
J244-78	A18-8	A 86	COMMON (IMU BLOWER CURRENT)		
J244-79	J1-25	A 77	BLOWER TELEMETRY DISCRETE		

S1 TOGGLE SWITCH 1016265-004 (ALTERNATE ACTION) FIG. 16

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S1-2	XF1-1	A 42	+28 VDC IMU STANDBY HI		
S1-3	A10-19	A 28	+28 VDC IMU STANDBY HI		
S1-3	A20-81	A 45	+28 VDC IMU STANDBY HI		

S2 ROTARY SWITCH 1897379-001 (SELECTOR) FIG. 17

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S2-2	A24K1-3	A 13	BUFFERED 3200 CPS SUPP HI		
S2-3	A21K3-3	A 11	X PIPA G/S OUTPUT HI		
S2-4	A21K2-3	A 9	Y PIPA G/S OUTPUT HI		
S2-5	A21K1-3	A 7	Z PIPA G/S OUTPUT HI		
S2-6	A24K1-8	A 13	SELECTED PIPA G/S OUTPUT		
S2-C1	A9-1	A 19	PIPA G/S OUTPUT SELECT HI		

S3 TOGGLE SWITCH 1016265-004 (ALTERNATE ACTION) FIG. 16

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S3-1	J1-6	A 44	INHIBIT COMPUTER POWER FAIL		
S3-2	A22K1-3	A 46	INHIBIT COMPUTER POWER FAIL		

SIZE	CODE IDENT NO.		
A	99974	6900146	
SCALE-NONE	REV LTR	A	SHEET 29 OF 31

S4 TOGGLE SWITCH 1016265-006 (MOMENTARY) FIG. 16

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S4-1	J1-76	A 59	OG SERVO AMP TEST INPUT		
S4-1	A23K1-3	A 60	OG SERVO AMP TEST INPUT		
S4-2	A23K1-2	A 61	MANUAL OG SERVO AMP TEST INPUT		

S5 TOGGLE SWITCH 1016265-006 (MOMENTARY) FIG. 16

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S5-1	J1-53	A 64	MG SERVO AMP TEST INPUT		
S5-1	A23K2-3	A 65	MG SERVO AMP TEST INPUT		
S5-2	A23K2-2	A 66	MANUAL MG SERVO AMP TEST INPUT		

S6 TOGGLE SWITCH 1016265-006 (MOMENTARY) FIG. 16

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S6-1	J1-77	A 69	IG SERVO AMP TEST INPUT		
S6-1	A23K3-3	A 70	IG SERVO AMP TEST INPUT		
S6-2	A23K3-2	A 71	MANUAL IG SERVO AMP TEST INPUT		

SHIEDS

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
SHLD OFA74	J1-48	A 74A	UPLINK I SHIELD		
SHLD OFA75	J1-46	A 75A	UPLINK O SHIELD		

SIZE	CODE IDENT NO.		
A	99974	6900146	
SCALE-NONE	REV LTR	A	SHEET 30 OF 31

XF1 FUSE HOLDER MS26527-1 FIG. 15

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
XF1-1	S1-2	A 42	+28 VDC IMU STANDBY HI		
XF1-2	J1-66	A 39	+28 VDC IMU STANDBY HI		
XF1-2	J1-67	A 40	+28 VDC IMU STANDBY HI		
XF1-2	J1-68	A 41	+28 VDC IMU STANDBY HI		

SIZE	CODE IDENT NO.		
A	99974	6900146	
SCALE-NONE	REV LTR	A	SHEET 31 OF 31

APPLICATION	
NEXT ASSY	USED ON
6900088-011	6900088-011

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE CLASS A PER TDRR -30098	20 JUN 66	JF
B	REVISED PER TDRR 30190	28-JUL-66	B. EF

REV	B	B	B	B	B	B	B	B	B											
SHEET	21	22	23	24	25	26	27	28	29											
REV STATUS OF SHEETS — REV				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

REV STATUS OF SHEETS																				
REV	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

REFERENCE: ACSK ONLY

AC ELECTRONICS DIV.
GM CORP. MILW. WIS.

R. TURNER 31 MAR 66
DRAFTSMAN DAY MO YR
CHECKER Molye 29 APR 66
ENGINEER J Mathew 29 APR 66
APPROVAL J M Walton 5-5-66
CONTR NO. NAS 9-497

NASA APPROVAL
MIT APPROVAL M G Whe 7-5-66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RUNNING LIST
(LEM PSAAM)

SIZE A
CODE IDENT. NO 99974
6900146
SCALE NONE
SHEET 1 OF 29

MIL 1377A6 12-65

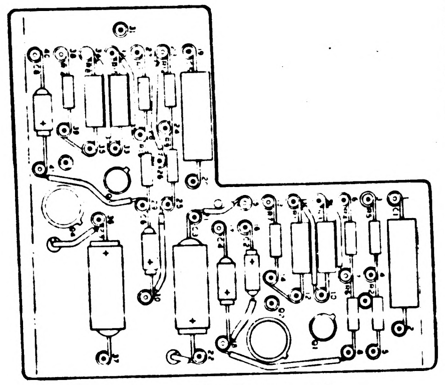


FIGURE 1 A2 THRU A9
1902433-011 AC AMPLIFIER
1902451 SCHEMATIC

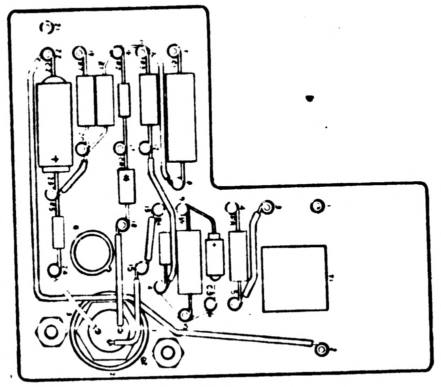


FIGURE 2 A10
1902434-011 LINE DRIVE AMPL.
1902448 SCHEMATIC

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR B	SHEET 2 of 27

MIL 2084 8-65

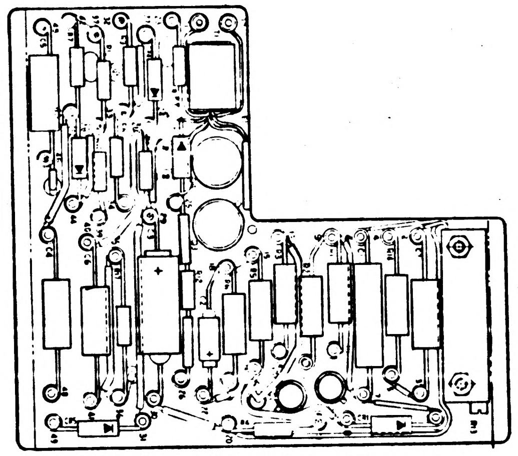


FIGURE 3 A12 THRU A17
2901154-011 GLITCH DETECTOR
2901155 SCHEMATIC

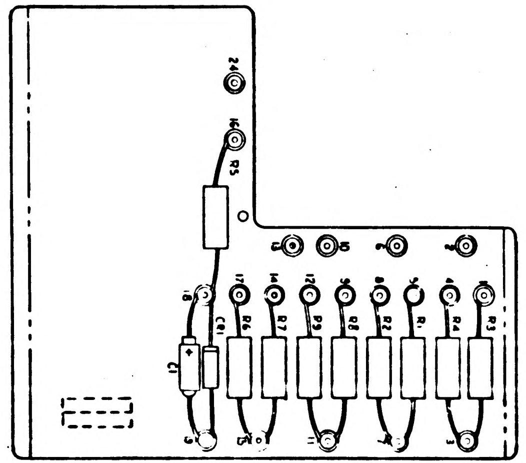


FIGURE 4 A18
6900141-011 ATTENUATOR ASSY
6900107 SCHEMATIC

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR B	SHEET 3 of 29

MIL 2084 8-65

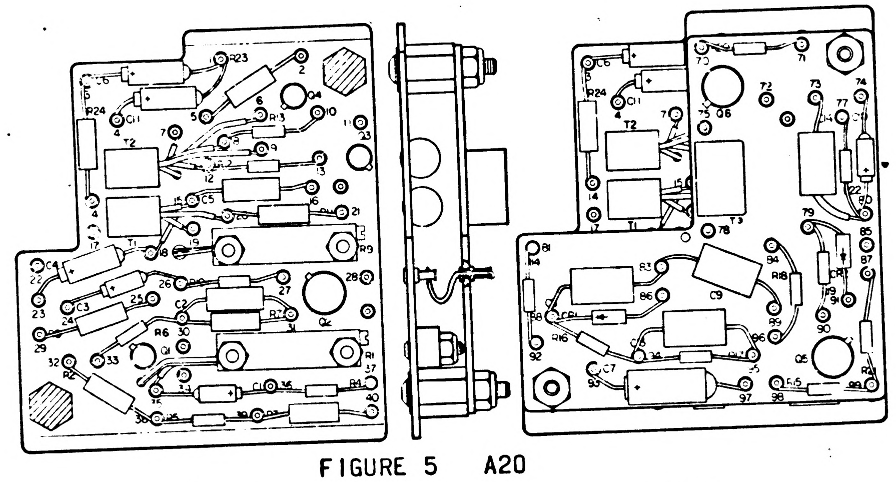


FIGURE 5 A20
2901063-011 PHASE, DIFF CKT BD ASSY
2900988 SCHEMATIC

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR B	SHEET 4 of 29

MIL 2084 8-65

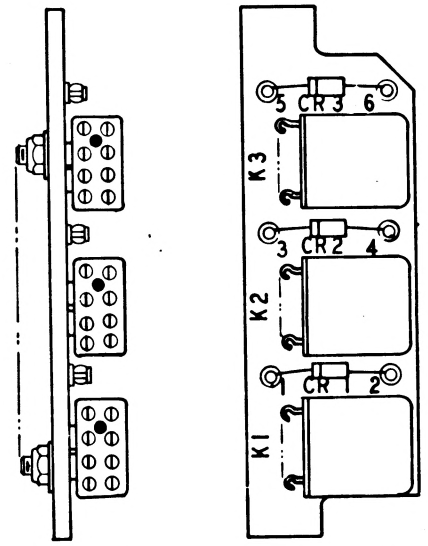


FIGURE 6 A21, A22 & A23
6900118-011
ELECTRONIC COMPONENT ASSY

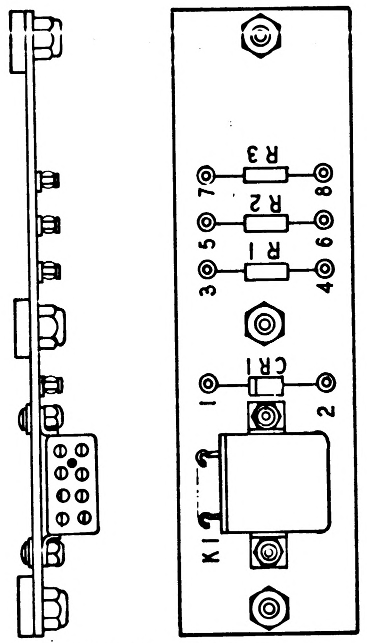


FIGURE 7 A24
6900120-011
ELECTRONIC COMPONENT ASSY

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR B	SHEET 5 of 29

MIL 2084 8-65

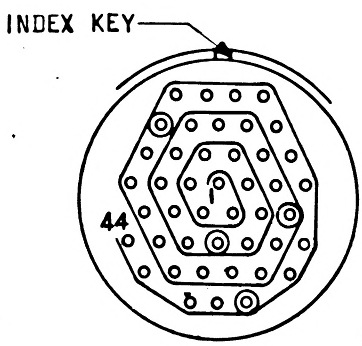


FIGURE 10
J243
1897252-109

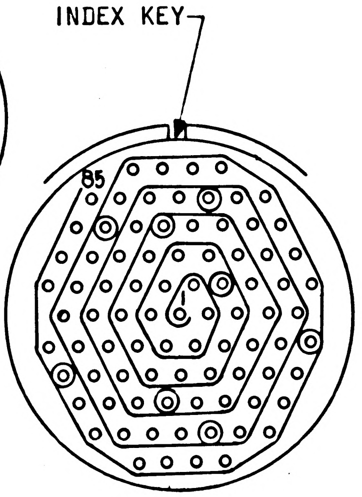


FIGURE 8
J1
6900132

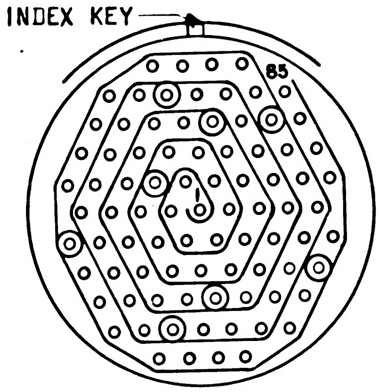


FIGURE 11
J244
1897247-001

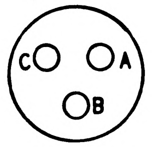


FIGURE 9
J232
MS3102R14S-7S(C) (1896916-107)

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR B	SHEET 6 OF 29

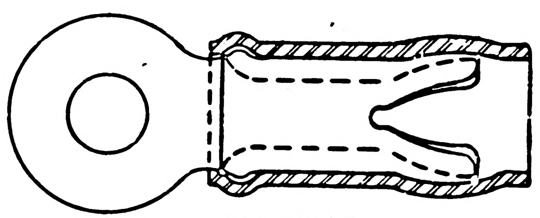


FIGURE 12
E1
1015902-45

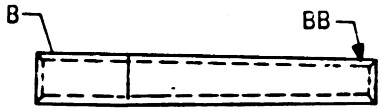


FIGURE 13
E2, E3 & E5
1016006-001

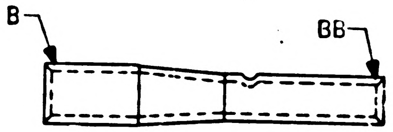


FIGURE 14
E4
1016006-002

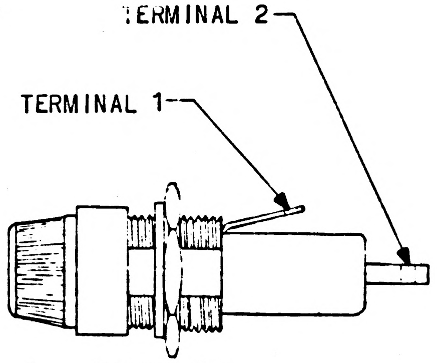
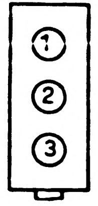


FIGURE 15
XF1
MS26572-1
F1
1897099-025

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR B	SHEET 7 OF 29



TERMINAL NUMBERS

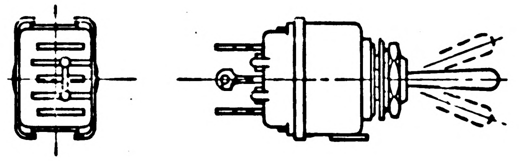


FIGURE 16
S1 & S3
1016265-004
S4, S5, & S6
1016265-006

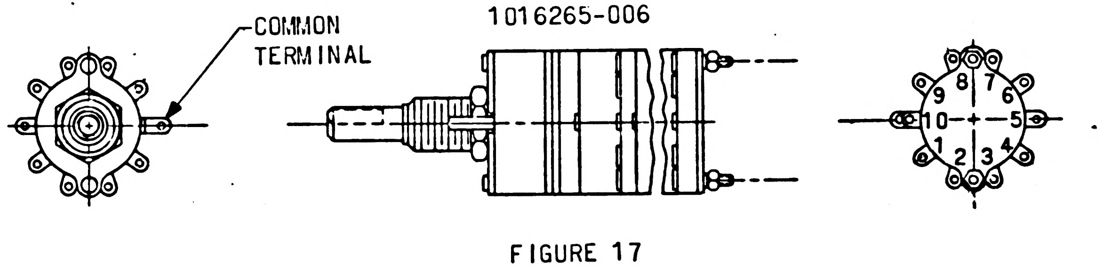


FIGURE 17
S2
1897379-001

SIZE	CODE IDENT. NO.	
A	99974	6900146
SCALE NONE	REV LTR B	SHEET 8 OF 29

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2	THE SUFFIX LETTER OF A LEAD IDENTIFICATION IDENTIFIES A SHIELD LEAD, COLOR, OR MARKED LETTER - A - SHIELD LEAD ON FROM END L - WHITE WITH BLUE TRACER. R - WHITE WITH RED TRACER.
3	ALL PART NUMBERS ARE FOR REFERENCE ONLY.
4	PARTIAL REFERENCE DESIGNATIONS ARE SHOWN----PREFIX WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
5	DRAWINGS FOR REF 2901155 SCHEMATIC DIAGRAM ELECTRICAL, GLITCH DETECTOR. 2900988 SCHEMATIC DIAGRAM ELECTRICAL, PHASE DIFFERENCE CIRCUIT. 6900107 SCHEMATIC DIAGRAM ELECTRICAL, ATTENUATOR BOARD 1902448 SCHEMATIC DIAGRAM ELECTRICAL, LINE DRIVE AMPLIFIER 1902451 SCHEMATIC DIAGRAM ELECTRICAL, AC AMPLIFIER. 6900089 WIRING HARNESS A 6900138 LEAD SET AA 6900131 SCHEMATIC DIAGRAM ELECTRICAL, PSA ADAPTER MODULE LEM 6900088 PSA ADAPTER MODULE (LEM)
6	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER
7	WIRING END OF ELECTRICAL PARTS AND SOCKETS SHOWN. FRONT FACE OF PIN CONNECTORS SHOWN. SOCKET CONNECTORS OPPOSITE

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR B	SHEET 9 OF 29

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A2			AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A2-1	J1-62	A 173	RSDR TRUN FINE ERROR (CDU) HI		
A2-9	J244-67	A 192	TRUN CDU FINE ERROR LO		
A2-13	A2-38	AA 37	+28 VDC IMU STANDBY HI		
A2-13	A3-38	A 107	+28 VDC IMU STANDBY HI		
A2-15	E4-88	A 213	CDU TP COM		
A2-17	J244-66	A 191	TRUN CDU FINE ERROR HI		
A2-19	J1-63	A 174	RSDR TRUN COARSE ERROR (CDU) HI		
A2-31	E4-88	A 144	CDU TP COM		
A2-32	J244-69	A 194	TRUN CDU COARSE ERROR LO		
A2-38	A2-13	AA 37	+28 VDC IMU STANDBY HI		
A2-40	J244-68	A 193	TRUN CDU COARSE ERROR HI		
A3			AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A3-1	J1-37	A 171	RRDR SHAFT FINE ERROR (CDU) HI		
A3-9	J244-63	A 188	SHAFT CDU FINE ERROR LO		
A3-13	A3-38	AA 36	+28 VDC IMU STANDBY HI		
A3-13	A4-38	A 122	+28 VDC IMU STANDBY HI		
A3-15	E4-8	A 211	CDU TP COM		
A3-17	J244-62	A 187	SHAFT CDU FINE ERROR HI		
A3-19	J1-61	A 172	RRDR SHAFT COARSE ERROR (CDU) HI		
A3-31	E4-8	A 212	CDU TP COM		
A3-32	J244-65	A 190	SHAFT CDU COARSE ERROR LO		
A3-38	A3-13	AA 36	+28 VDC IMU STANDBY HI		
A3-38	A2-13	A 107	+28 VDC IMU STANDBY HI		
A3-40	J244-64	A 189	SHAFT CDU COARSE ERROR HI		

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A4			AC AMPLIFIER,ASSY 1902433-011 FIG. 1		
A4-1	J1-39	A 169	OG FINE ERROR (CDU) HI		
A4-9	J244-57	A 184	OG CDU FINE ERROR LO		
A4-13	A4-38	AA 35	+28 VDC IMU STANDBY HI		
A4-13	A5-38	A 106	+28 VDC IMU STANDBY HI		
A4-15	E4-8	A 209	CDU TP COM		
A4-17	J244-56	A 183	OG CDU FINE ERROR HI		
A4-19	J1-38	A 170	OG COARSE ERROR (CDU) HI		
A4-31	E4-8	A 210	CDU TP COM		
A4-32	J244-59	A 186	OG CDU COARSE ERROR LO		
A4-38	A4-13	AA 35	+28 VDC IMU STANDBY HI		
A4-38	A3-13	A 122	+28 VDC IMU STANDBY HI		
A4-40	J244-58	A 185	OG CDU COARSE ERROR HI		
A5			AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A5-1	J1-19	A 167	MG FINE ERROR (CDU) HI		
A5-9	J244-53	A 180	MG CDU FINE ERROR LO		
A5-13	A5-38	AA 34	+28 VDC IMU STANDBY HI		
A5-13	A6-38	A 105	+28 VDC IMU STANDBY HI		
A5-15	E4-8	A 207	CDU TP COM		
A5-17	J244-52	A 179	MG CDU FINE ERROR HI		
A5-19	J1-20	A 168	MG COARSE ERROR (CDU) HI		
A5-31	E4-8	A 208	CDU TP COM		
A5-32	J244-55	A 182	MG CDU COARSE ERROR LO		
A5-38	A5-13	AA 34	+28 VDC IMU STANDBY HI		
A5-38	A4-13	A 106	+28 VDC IMU STANDBY HI		
A5-40	J244-54	A 181	MG CDU COARSE ERROR HI		

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A6			AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A6-1	J1-2	A 165	IG FINE ERROR (CDU) HI		
A6-9	J244-49	A 176	IG CDU FINE ERROR LO		
A6-13	A6-38	AA 33	+28 VDC IMU STANDBY HI		
A6-13	A7-38	A 104	+28 VDC IMU STANDBY HI		
A6-15	E4-8	A 205	CDU TP COM		
A6-17	J244-48	A 175	IG CDU FINE ERROR HI		
A6-19	J1-7	A 166	IG COARSE ERROR (CDU) HI		
A6-31	E4-8	A 206	CDU TP COM		
A6-32	J244-51	A 178	IG CDU COARSE ERROR LO		
A6-38	A6-13	AA 33	+28 VDC IMU STANDBY HI		
A6-38	A5-13	A 105	+28 VDC IMU STANDBY HI		
A6-40	J244-50	A 177	IG CDU COARSE ERROR HI		
A7			AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A7-1	J1-56	A 142	MG ERROR		
A7-9	J244-41	A 152	MG SERVO ERROR TOTAL LO		
A7-13	A7-38	AA 32	+28 VDC IMU STANDBY HI		
A7-13	A8-38	A 103	+28 VDC IMU STANDBY HI		
A7-15	A7-31	AA 38	GIMBAL ERROR LO		
A7-17	J244-40	A 151	MG SERVO ERROR TOTAL HI		
A7-19	J1-80	A 143	OG ERROR		
A7-31	A7-15	AA 38	GIMBAL ERROR LO		
A7-31	A8-31	A 145	GIMBAL ERROR LO		
A7-31	J1-55	A 146	GIMBAL ERROR LO		
A7-32	J244-45	A 154	OG SERVO ERROR TOTAL LO		
A7-38	A7-13	AA 32	+28 VDC IMU STANDBY HI		
A7-38	A6-13	A 104	+28 VDC IMU STANDBY HI		
A7-40	J244-44	A 153	OG SERVO ERROR TOTAL HI		

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A8			AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A8-1	A18-2	A 139	BUFFERED 800 CPS 28 V 5 PCT PHASE A		
A8-9	J244-23	A 148	800 CPS 5 PCT 0 DEG SUPPLY LO		
A8-13	A8-38	AA 31	+28 VDC IMU STANDBY HI		
A8-13	A9-38	A 102	+28 VDC IMU STANDBY HI		
A8-15	A18-4	A 140	800 CPS 28 V 5 PCT PHASE B COM		
A8-17	J244-22	A 147	800 CPS 5 PCT 0 DEG SUPPLY HI		
A8-19	J1-81	A 141	IG ERROR		
A8-31	A7-31	A 145	GIMBAL ERROR LO		
A8-32	J244-37	A 150	IG SERVO ERROR TOTAL LO		
A9-38	A8-13	AA 31	+28 VDC IMU STANDBY HI		
A8-38	A7-13	A 103	+28 VDC IMU STANDBY HI		
A8-40	J244-36	A 149	IG SERVO ERROR TOTAL HI		
A9			AC AMPLIFIER ASSY 1902433-011 FIG. 1		
A9-1	S2-C1	A 19	PIPA G/S OUTPUT SELECTED HI		
A9-9	A10-21	A 23	PIPA G/S OUTPUT LO		
A9-13	A9-38	AA 30	+28 VDC IMU STANDBY HI		
A9-13	A10-19	A 24	+28 VDC IMU STANDBY HI		
A9-15	A18-12	A 25	PIPA G/S OUTPUT SELECTED LO		
A9-17	A10-7	A 22	LINE DRIVE AMP INPUT HI		
A9-19	A18-6	A 137	BUFFERED 800 CPS 28 V 5 PCT PHASE B		
A9-31	A18-8	A 138	800 CPS 28 V 5 PCT PHASE B COM		
A9-32	J244-21	A 134	800 CPS 5 PCT 90 DEG SUPPLY LO		
A9-38	A9-13	AA 30	+28 VDC IMU STANDBY HI		
A9-38	A8-13	A 102	+28 VDC IMU STANDBY HI		
A9-40	J244-20	A 133	800 CPS 5 PCT 90 DEG SUPPLY HI		

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A10				LINE DRIVE AMPLIFIER ASSY 1902434-011 FIG. 2		
A10-1	J232-B	A	21	PIPA HARDLINE LO		
A10-3	J232-A	A	20	PIPA HARDLINE HI		
A10-7	A9-17	A	22	LINE DRIVE AMP INPUT HI		
A10-19	A9-13	A	24	+28 VDC IMU STANDBY HI		
A10-19	S1-1	A	28	+28 VDC IMU STANDBY HI		
A10-21	A9-9	A	23	PIPA G/S OUTPUT LO		
A12				GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A12-2	J1-83	A	88	LGC +14 VDC SUPPLY HI		
A12-4	J244-4	A	108	LGC +14 VDC SUPPLY LEVEL HI		
A12-17	J244-6	A	110	LGC +14 VDC SUPPLY NOISE/PEAKS HI		
A12-21	J244-7	A	111	LGC +14 VDC SUPPLY NOISE/PEAKS LO		
A12-23	A13-23	A	101	+28 VDC IMU STANDBY HI		
A12-23	A22K1-8	A	215	+28 VDC IMU STANDBY HI		
A12-37	E3-8	A	81	0 VDC IMU		
A12-42	J244-5	A	109	LGC +14 VDC SUPPLY LEVEL LO		
A13				GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A13-2	J1-84	A	89	AGC +4 VDC SUPPLY HI		
A13-4	J244-8	A	112	AGC +4 VDC SUPPLY LEVEL HI		
A13-17	J244-10	A	114	LGC +4 VDC SUPPLY NOISE/PEAKS HI		
A13-21	J244-11	A	115	LGC +4 VDC SUPPLY NOISE/PEAKS LO		
A13-23	A14-23	A	100	+28 VDC IMU STANDBY HI		
A13-23	A12-23	A	101	+28 VDC IMU STANDBY HI		
A13-37	E3-8	A	82	0 VDC IMU		
A13-42	J244-9	A	113	LGC +4 VDC SUPPLY LEVEL		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR B	SHEET 14 OF 29

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A14				GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A14-2	J1-21	A	90	CDU +4 VDC SUPPLY HI		
A14-4	J244-12	A	116	CDU +4 VDC SUPPLY LEVEL HI		
A14-17	J244-14	A	118	CDU +4 VDC SUPPLY NOISE/PEAKS HI		
A14-21	J244-15	A	119	CDU +4 VDC SUPPLY NOISE/PEAKS LO		
A14-23	A15-23	A	99	+28 VDC IMU STANDBY HI		
A14-23	A13-23	A	100	+28 VDC IMU STANDBY HI		
A14-37	E4-88	A	214	CDU TP COM		
A14-42	J244-13	A	117	CDU +4 VDC SUPPLY LEVEL LO		
A15				GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A15-2	J1-42	A	91	IMU OPERATE +28 VDC HI		
A15-4	J244-24	A	120	IMU OPERATE +28 VDC LEVEL HI		
A15-17	J244-26	A	123	IMU OPERATE +28 VDC NOISE/PEAKS HI		
A15-21	J244-27	A	124	IMU OPERATE +28 VDC NOISE/PEAKS LO		
A15-23	A16-23	A	98	+28 VDC IMU STANDBY HI		
A15-23	A14-23	A	99	+28 VDC IMU STANDBY HI		
A15-37	E3-88	A	83	0 VDC IMU		
A15-42	J244-25	A	121	IMU OPERATE +28 VDC LEVEL LO		
A16				GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A16-2	J1-41	A	92	+28 VDC IMU STANDBY HI		
A16-4	J244-28	A	125	IMU STANDBY +28 VDC LEVEL HI		
A16-17	J244-30	A	127	IMU STANDBY +28 VDC NOISE/PEAKS HI		
A16-21	J244-31	A	128	+28 VDC IMU STANDBY NOISE/PEAKS LO		
A16-23	A17-23	A	97	+28 VDC IMU STANDBY HI		
A16-23	A15-23	A	98	+28 VDC IMU STANDBY HI		
A16-37	E3-88	A	84	0 VDC IMU		
A16-42	J244-29	A	126	IMU STANDBY +28 VDC LEVEL LO		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR B	SHEET 15 OF 29

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A17				GLITCH DETECTOR ASSY 2901154-011 FIG. 3		
A17-2	J1-60	A	93	LGC OPERATE +28 VDC HI		
A17-4	J244-32	A	129	LGC OPERATE +28 VDC LEVEL HI		
A17-17	J244-34	A	131	LGC OPERATE +28 VDC NOISE/PEAKS HI		
A17-21	J244-35	A	132	LGC OPERATE +28 VDC NOISE/PEAKS LO		
A17-23	A18-16	A	96	+28 VDC IMU STANDBY HI		
A17-23	A16-23	A	97	+28 VDC IMU STANDBY HI		
A17-37	E3-88	A	85	0 VDC IMU		
A17-42	J244-33	A	130	LGC OPERATE +28 VDC LEVEL LO		
A18				ATTENUATOR CIRCUIT BOARD ASSY 6900141-011 FIG. 4		
A18-1	J1-47	A	136	800 CPS 28 V 5 PCT PHASE A HI		
A18-2	A8-1	A	139	BUFFERED 800 CPS 28 V 5 PCT PHASE A		
A18-4	A18-8	AA	39	800 CPS 28 V 5 PCT PHASE B COM		
A18-4	J1-26	A	87	800 CPS 28 V 5 PCT PHASE B COM		
A18-4	A8-15	A	140	800 CPS 28 V 5 PCT PHASE B COM		
A18-5	J1-27	A	135	800 CPS 28 V 5 PCT PHASE B HI		
A18-6	A9-19	A	137	BUFFERED 800 CPS 28 V 5 PCT PHASE A		
A18-8	A18-4	AA	39	800 CPS 28 V 5 PCT PHASE B COM		
A18-8	J244-78	A	86	(IMU BLOWER CURRENT) COMM.		
A18-8	A9-31	A	138	800 CPS 28 V 5 PCT PHASE B COM		
A18-9	J1-65	A	29	3200 CPS 28 V SUPPLY HI		
A18-10	A24K1-3	A	14	BUFFERED 3200 CPS SUPPLY HI		
A18-10	A20-22	A	27	BUFFERED 3200 CPS SUPPLY HI		
A18-12	A9-15	A	25	PIPA G/S OUTPUT SELECTED LO		
A18-12	A20-17	A	26	PIPA G/S OUTPUT SELECTED LO		
A18-13	A23K1-8	A	57	+5 VDC		
A18-14	E2-88	A	155	TM CURRENT LO		
A18-16	A20-81	A	43	+28 VDC IMU STANDBY HI		
A18-16	A17-23	A	96	+28 VDC IMU STANDBY HI		
A18-17	A23K3-8	A	58	+10 VDC		
A18-24	E5-88	A	30	PIPA G/S OUTPUT LO		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR B	SHEET 16 OF 29

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
A20				PHASE DIFFERENTIAL CIRCUIT BOARD ASSY 2901063-011 FIG. 5		
A20-3	J244-76	A	37	PHASE DIFF 3.2 KC SUPPLY LGC SYNC HI		
A20-14	J244-77	A	38	PHASE DIFF 3.2 KC SUPPLY LGC SYNC LO		
A20-17	A18-12	A	26	PIPA G/S OUTPUT SELECTED LO		
A20-22	A18-10	A	27	BUFFERED 3200 CPS SUPPLY HI		
A20-75	J1-45	A	35	3.2K PPS (LGC SYN) HI		
A20-78	J1-69	A	36	3.2K PPS (LGC SYN) LO		
A20-81	A18-16	A	43	+28 VDC IMU STANDBY HI		
A20-81	S1-1	A	45	+28 VDC IMU STANDBY HI		
A21				ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6		
A21-1	A21K1-1	AA	1	Z PIPA SELECT HI		
A21-1	J243-31	A	1	Z PIPA SELECT HI		
A21-2	A21K1-5	AA	2	Z PIPA SELECT LO		
A21-2	J243-30	A	2	Z PIPA SELECT LO		
A21-3	A21K2-1	AA	4	Y PIPA SELECT HI		
A21-3	J243-29	A	3	Y PIPA SELECT HI		
A21-4	A21K2-5	AA	5	Y PIPA SELECT LO		
A21-4	J243-14	A	4	Y PIPA SELECT LO		
A21-5	A21K3-1	AA	7	X PIPA SELECT HI		
A21-5	J243-13	A	5	X PIPA SELECT HI		
A21-6	A21K3-5	AA	8	X PIPA SELECT LO		
A21-6	J243-28	A	6	X PIPA SELECT LO		
A22				ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6		
A22-1	A22K1-1	AA	12	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-2	A22K1-5	AA	15	LGC MARGIN TEST ENABLE RETURN		
A22-3	A22K1-1	AA	13	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-3	A22K2-1	AA	16	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-4	A22K2-5	AA	17	LGC MARGIN TEST ENABLE RETURN		

SIZE A	CODE IDENT NO. 99974	6900146
SCALE-NONE	REV LTR B	SHEET 17 OF 29

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
(CONT.) A22			ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6		
A22-4	A22K1-5	AA 18	LGC MARGIN TEST ENABLE RETURN		
A22-5	A22K2-1	AA 14	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-5	A22K3-1	AA 22	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22-6	A22K3-5	AA 20	LGC MARGIN TEST ENABLE RETURN		
A22-6	A22K2-5	AA 21	LGC MARGIN TEST ENABLE RETURN		
A23			ELECTRONIC COMPONENTS ASSY 6900118-011 FIG. 6		
A23-1	A23K1-1	AA 24	OG SERVO TEST COMMAND HI		
A23-1	J243-17	A 62	OG SERVO TEST COMMAND HI		
A23-2	A23K1-5	AA 25	OG SERVO TEST COMMAND LO		
A23-2	J243-34	AA 63	OG SERVO TEST COMMAND LO		
A23-3	A23K2-1	AA 26	MG SERVO TEST COMMAND HI		
A23-3	J243-33	A 67	MG SERVO TEST COMMAND HI		
A23-4	A23K2-5	AA 27	MG SERVO TEST COMMAND LO		
A23-4	J243-16	A 68	MG SERVO TEST COMMAND LO		
A23-5	A23K3-1	AA 28	IG SERVO TEST COMMAND HI		
A23-5	J243-15	A 72	IG SERVO TEST COMMAND HI		
A23-6	A23K3-5	AA 29	IG SERVO TEST COMMAND LO		
A23-6	J243-32	A 73	IG SERVO TEST COMMAND LO		
A24			ELECTRONIC COMPONENTS ASSY 6900120-011 FIG. 7		
A24-1	A24K1-1	AA 9	PIPA REF SELECT HI		
A24-1	J243-5	A 16	PIPA REF SELECT HI		
A24-2	A24K1-5	AA 10	PIPA REF SELECT LO		
A24-2	J243-6	A 17	PIPA REF SELECT LO		
A24-3	J1-82	A 196	TEMP MON (LGC) HI		
A24-4	J244-70	A 202	LGC TEMPERATURE HI		
A24-5	J1-58	A 198	CAL MOD TEMP HI		
A24-6	J244-72	A 203	CAL MOD TEMP HI		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR B	SHEET 18 OF 29

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
(CONT.) A24			ELECTRONIC COMPONENTS ASSY 6900120-011 FIG. 7		
A24-7	J1-35	A 200	800 CPS POWER SUPPLY TEMP HI		
A24-8	J244-74	A 204	PSA TEMPERATURE HI		
A21K1-1	A21-1	AA 1	Z PIPA SELECT HI		
A21K1-3	S2-5	A 7	Z PIPA G/S OUTPUT HI		
A21K1-3	J1-78	A 8	Z PIPA G/S OUTPUT HI		
A21K1-5	A21-2	AA 2	Z PIPA SELECT LO		
A21K1-8	A21K2-2	AA 3	SELECTED PIPA OUTPUT		
A21K2-1	A21-3	AA 4	Y PIPA SELECT HI		
A21K2-2	A21K1-8	AA 3	SELECTED PIPA OUTPUT		
A21K2-3	S2-4	A 9	Y PIPA G/S OUTPUT HI		
A21K2-3	J1-32	A 10	Y PIPA G/S OUTPUT HI		
A21K2-5	A21-4	AA 5	Y PIPA SELECT LO		
A21K2-8	A21K3-2	AA 6	SELECTED PIPA OUTPUT		
A21K3-1	A21-5	AA 7	X PIPA SELECT HI		
A21K3-2	A21K2-8	AA 6	SELECTED PIPA OUTPUT		
A21K3-3	S2-3	A 11	X PIPA G/S OUTPUT HI		
A21K3-3	J1-33	A 12	X PIPA G/S OUTPUT HI		
A21K3-5	A21-6	AA 8	X PIPA SELECT LO		
A21K3-8	A24K1-2	A 15	SELECTED PIPA G/S OUTPUT		
A22K1-1	A22-1	AA 12	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K1-1	A22-3	AA 13	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K1-3	S3-2	A 46	INHIBIT COMPUTER PWR FAIL		
A22K1-5	A22-2	AA 15	LGC MARGIN TEST ENABLE RETURN		
A22K1-5	A22-4	AA 18	LGC MARGIN TEST ENABLE RETURN		
A22K1-8	A12-23	A 215	+28 VDC IMU STANDBY HI		
A22K2-1	A22-5	AA 14	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K2-1	A22-3	AA 16	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K2-3	A22K2-7	AA 19	0 VDC AGC		
A22K2-3	J1-59	A 48	0 VDC AGC		
A22K2-4	J243-22	A 49	0 VDC AGC DAC NO. 1		
A22K2-5	A22-4	AA 17	LGC MARGIN TEST ENABLE RETURN		
A22K2-5	A22-6	AA 21	LGC MARGIN TEST ENABLE RETURN		
A22K2-7	A22K2-3	AA 19	0 VDC AGC		
A22K2-8	J243-8	A 50	0 VDC AGC DAC NO. 2		
A22K3-1	A22-5	AA 22	LGC MARGIN TEST ENABLE HI (28 VDC)		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR B	SHEET 19 OF 29

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
(CONT.) A24			ELECTRONIC COMPONENTS ASSY 6900120-011 FIG. 7		
A22K3-1	J243-35	A 47	LGC MARGIN TEST ENABLE HI (28 VDC)		
A22K3-3	J1-36	A 55	ACE BIAS 2		
A22K3-4	J243-39	A 52	CONTROL 1 (ACE)		
A22K3-5	A22-6	AA 20	LGC MARGIN TEST ENABLE RETURN		
A22K3-5	J243-18	A 51	LGC MARGIN TEST ENABLE RETURN		
A22K3-7	J1-18	A 54	ACE BIAS 1		
A22K3-8	J243-20	A 53	CONTROL 2 (ACE)		
A23K1-1	A23-1	AA 24	OG SERVO TEST COMMAND HI		
A23K1-2	S4-2	A 61	MANUAL OG SERVO AMP TEST INPUT		
A23K1-3	S4-1	A 60	OG SERVO AMP TEST INPUT		
A23K1-5	A23-2	AA 25	OG SERVO TEST COMMAND LO		
A23K1-8	A23K2-8	AA 23	MANUAL MG SERVO TEST INPUT		
A23K1-8	A18-13	A 57	+5 VDC		
A23K2-1	A23-3	AA 26	MG SERVO TEST COMMAND HI		
A23K2-2	S5-2	A 66	MANUAL MG SERVO AMP TEST INPUT		
A23K2-3	S5-1	A 65	MG SERVO AMP TEST INPUT		
A23K2-5	A23-4	AA 27	MG SERVO TEST COMMAND LO		
A23K2-8	A23K1-8	AA 23	MANUAL MG SERVO AMP TEST INPUT		
A23K3-1	A23-5	AA 28	IG SERVO TEST COMMAND HI		
A23K3-2	S6-2	A 71	MANUAL IG SERVO AMP TEST INPUT		
A23K3-3	S6-1	A 70	IG SERVO AMP TEST INPUT		
A23K3-5	A23-6	AA 29	IG SERVO TEST COMMAND LO		
A23K3-8	A18-17	A 58	+10 VDC		
A24K1-1	A24-1	AA 9	PIPA REF SELECT HI		
A24K1-2	A21K3-8	A 15	SELECTED PIPA G/S OUTPUT		
A24K1-3	S2-2	A 13	BUFFERED 3200 CPS SUPPLY HI		
A24K1-3	A18-10	A 14	BUFFERED 3200 CPS SUPPLY HI		
A24K1-5	A24-2	AA 10	PIPA REF SELECT LO		
A24K1-8	S2-6	A 18	SELECTED PIPA G/S OUTPUT		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR B	SHEET 20 OF 29

FROM	TO	LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E1			TERMINAL LUG 1015902-45 FIG. 12		
E1	J232-C	A 56	STRUCTURE GRD		
E1	J1-85	A 195	STRUCTURE GRD		
E2			SPLICE REDUCER 1016006-001 FIG. 13		
E2-B	J244-39	A 157	TM CURRENT LO		
E2-B	J244-43	A 158	TM CURRENT LO		
E2-B	J244-47	A 159	TM CURRENT LO		
E2-BB	A18-14	A 155	TM CURRENT LO		
E2-BB	J1-52	A 156	TM CURRENT LO		
E3			SPLICE REDUCER 1016006-001 FIG. 13		
E3-B	J1-23	A 78	0 VDC IMU		
E3-B	J244-2	A 79	0 VDC IMU		
E3-B	J244-19	A 80	0 VDC IMU		
E3-B	A12-37	A 81	0 VDC IMU		
E3-B	A13-37	A 82	0 VDC IMU		
E3-BB	A15-37	A 83	0 VDC IMU		
E3-BB	A16-37	A 84	0 VDC IMU		
E3-BB	A17-37	A 85	0 VDC IMU		
E4			SPLICE REDUCER 1016006-002 FIG. 14		
E4-B	A6-15	A 205	CDU TP COM		
E4-B	A6-31	A 206	CDU TP COM		
E4-B	A5-15	A 207	CDU TP COM		
E4-B	A5-31	A 208	CDU TP COM		
E4-B	A4-15	A 209	CDU TP COM		

SIZE	CODE IDENT NO.	
A	99974	6900146
SCALE-NONE	REV LTR B	SHEET 21 OF 29

(CONT.) E4 SPLICE REDUCER 1016006-002 FIG. 14

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E4-B	A4-31	A	210	CDU TP COM		
E4-B	A3-15	A	211	CDU TP COM		
E4-B	A3-31	A	212	CDU TP COM		
E4-BB	J1-8	A	95	CDU TP COM		
E4-BB	A2-31	A	144	CDU TP COM		
E4-BB	A2-15	A	213	CDU TP COM		
E4-BB	A14-37	A	214	CDU TP COM		

E5 SPLICE REDUCER 1016006-001 FIG. 13

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
E5-B	J1-79	A	31	PIPA G/S OUTPUT LO		
E5-B	J1-54	A	32	PIPA G/S OUTPUT LO		
E5-B	J1-16	A	33	PIPA G/S OUTPUT LO		
E5-B	J1-64	A	34	PIPA G/S OUTPUT LO		
E5-BB	A18-24	A	30	PIPA G/S OUTPUT LO		

J1 CONNECTOR, RECEPTACLE, ELECTRICAL 6900132 FIG. 8

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J1-2	A6-1	A	165	IG FINE ERROR (CDU) HI		
J1-6	S3-1	A	44	INHIBIT COMPUTER POWER FAIL		
J1-7	A6-19	A	166	IG COARSE ERROR (CDU) HI		
J1-8	E4-BB	A	95	CDU TP COM		
J1-16	E5-B	A	33	PIPA G/S OUTPUT LO		
J1-17	J244-75	A	201	800 CPS POWER SUPPLY TEMPERATURE LO		
J1-18	A22K3-7	A	54	ACE BIAS 1		
J1-19	A5-1	A	167	MG FINE ERROR (CDU) HI		
J1-20	A5-19	A	168	MG COARSE ERROR (CDU) HI		
J1-21	A14-2	A	90	CDU +4 VDC SUPPLY HI		
J1-23	E3-B	A	78	0 VDC IMU		
J1-24	J244-1	A	76	HEATER TELEMETRY DISCRETE,		
J1-25	J244-79	A	77	BLOWER TELEMETRY DISCRETE		

(CONT.) J1 CONNECTOR, RECEPTACLE, ELECTRICAL 6900132 FIG. 8

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J1-26	A18-4	A	87	800 CPS 28 V 5 PCT PHASE B COM		
J1-27	A18-5	A	135	800 CPS 28 V 5 PCT PHASE B HI		
J1-30	J244-42	A	161	MG TORQUE MOTOR CURRENT MON		
J1-31	J244-38	A	160	IG TORQUE MOTOR CURRENT MON		
J1-32	A21K2-3	A	10	Y PIPA G/S OUTPUT HI		
J1-33	A21K3-3	A	12	X PIPA G/S OUTPUT HI		
J1-34	J244-73	A	199	CAL MOD TEMP LO		
J1-35	A24-7	A	200	800 CPS POWER SUPPLY TEMPERATURE HI		
J1-36	A22K3-3	A	55	ACE BIAS 2		
J1-37	A3-1	A	171	RRDR SHAFT FINE ERROR (CDU) HI		
J1-38	A4-19	A	170	OG COARSE ERROR (CDU) HI		
J1-39	A4-1	A	169	OG FINE ERROR (CDU) HI		
J1-41	A16-2	A	92	+28 VDC IMU STANDBY HI		
J1-42	A15-2	A	91	IMU OPERATE +28 VDC HI		
J1-43	J244-18	A	94	-28 VDC TP HI		
J1-45	A20-75	A	35	3.2K PPS (LGC SYNC) HI		
J1-46	SHLD OFA75	A	75A	UPLINK 0 SHIELD		
J1-47	A18-1	A	136	800 CPS 28 V 5 PCT PHASE A HI		
J1-48	SHLD OFA74	A	74A	UPLINK I SHIELD		
J1-51	J244-46	A	162	OG TORQUE MOTOR CURRENT MON		
J1-52	E2-BB	A	156	TM CURRENT LO		
J1-53	S5-1	A	64	MG SERVO AMP TEST INPUT		
J1-54	E5-B	A	32	PIPA G/S OUTPUT LO		
J1-55	A7-31	A	146	GIMBAL ERROR LO		
J1-56	A7-1	A	142	MG ERROR		
J1-57	J244-71	A	197	TEMP MON 1 (LGC) LO		
J1-58	A24-5	A	198	CAL MOD TEMP HI		
J1-59	A22K2-3	A	48	0 VDC AGC		
J1-60	A17-2	A	93	LGC OPERATE +28 VDC HI		
J1-61	A3-19	A	172	RRDR SHAFT COARSE ERROR (CDU) HI		
J1-62	A2-1	A	173	RRDR TRUN FINE ERROR (CDU) HI		
J1-63	A2-19	A	174	RRDR TRUN COARSE ERROR (CDU) HI		
J1-64	E5-B	A	34	PIPA G/S OUTPUT LO		
J1-65	A18-9	A	29	3200 CPS 28 V SUPPLY HI		
J1-66	XF1-2	A	39	+28 VDC IMU STANDBY HI		

(CONT.) J1 CONNECTOR, RECEPTACLE, ELECTRICAL 6900132 FIG. 8

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J1-67	XF1-2	A	40	+28 VDC IMU STANDBY HI		
J1-68	XF1-2	A	41	+28 VDC IMU STANDBY HI		
J1-69	A20-78	A	36	3.2K PPS (LGC SYNC) LO		
J1-70	J243-43	A	75L	UPLINK 0 HI		
J1-71	J243-44	A	75R	UPLINK 0 LO		
J1-72	J243-42	A	74L	UPLINK I HI		
J1-73	J243-24	A	74R			
J1-74	J244-60	A	163	IRIG TEMPERATURE HI		
J1-75	J244-61	A	164	IRIG TEMPERATURE LO		
J1-76	S4-1	A	59	OG SERVO AMP TEST INPUT		
J1-77	S6-1	A	69	IG SERVO AMP TEST INPUT		
J1-78	A21K1-3	A	8	Z PIPA G/S OUTPUT HI		
J1-79	E5-B	A	31	PIPA G/S OUTPUT LO		
J1-80	A7-19	A	143	OG ERROR		
J1-81	A8-19	A	141	IG ERROR		
J1-82	A24-3	A	196	TEMP MON (LGC) HI		
J1-83	A12-2	A	88	LGC +14 VDC SUPPLY HI		
J1-84	A13-2	A	89	LGC +4 VDC SUPPLY HI		
J1-85	E1	A	195	STRUCTURE GROUND		

J232 CONNECTOR, RECEPTACLE, ELECTRICAL MS3102R14S-7S(C) FIG. 9

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J232-A	A10-3	A	20	PIPA HARDLINE HI		
J232-B	A10-1	A	21	PIPA HARDLINE LO		
J232-C	E1	A	56	STRUCTURE GRD		

J243 CONNECTOR, RECEPTACLE, ELECTRICAL 1897252-109 FIG. 10

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J243-5	A24-1	A	16	PIPA REF SELECT HI		
J243-6	A24-2	A	17	PIPA REF SELECT LO		
J243-8	A22K2-8	A	50	0 VDC AGC DAC NO. 2		

(CONT.) J243 CONNECTOR, RECEPTACLE, ELECTRICAL 1897252-109 FIG. 10

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J243-13	A21-5	A	5	X PIPA SELECT HI		
J243-14	A21-4	A	4	Y PIPA SELECT LO		
J243-15	A23-5	A	72	IG SERVO TEST COMMAND HI		
J243-16	A23-4	A	68	MG SERVO TEST COMMAND LO		
J243-17	A23-1	A	62	OG SERVO TEST COMMAND HI		
J243-18	A22K3-5	A	51	LGC MARGIN TEST ENABLE RETURN		
J243-20	A22K3-8	A	53	CONTROL 2 (ACE)		
J243-22	A22K2-4	A	49	0 VDC AGC DAC NO. 1		
J243-24	J1-73	A	74R	UPLINK 1 LO		
J243-28	A21-6	A	6	X PIPA SELECT LO		
J243-29	A21-3	A	3	Y PIPA SELECT HI		
J243-30	A21-2	A	2	Z PIPA SELECT LO		
J243-31	A21-1	A	1	Z PIPA SELECT HI		
J243-32	A23-6	A	73	IG SERVO TEST COMMAND LO		
J243-33	A23-3	A	67	MG SERVO TEST COMMAND HI		
J243-34	A23-2	A	63	OG SERVO TEST COMMAND LO		
J243-35	A22K3-1	A	47	LGC MARGIN TEST ENABLE HI (+28 VDC)		
J243-39	A22K3-4	A	52	CONTROL 1 (ACE)		
J243-42	J1-72	A	74L	UPLINK 1 HI		
J243-43	J1-70	A	75L	UPLINK 0 HI		
J243-44	J1-71	A	75R	UPLINK 0 LO		

J244 CONNECTOR, RECEPTACLE, ELECTRICAL 1897247-001 FIG. 11

FROM	TO		LEAD NO	CIRCUIT FUNCTION	PEN NOTE	NET. NO.
J244-1	J1-24	A	76	HEATER TELEMETRY DISCRETE		
J244-2	E3-B	A	79	0 VDC IMU		
J244-4	A12-4	A	108	LGC +14 VDC SUPPLY LEVEL HI		
J244-5	A12-42	A	109	LGC +14 VDC SUPPLY LEVEL LO		
J244-6	A12-17	A	110	LGC +14 VDC SUPPLY NOISE/PEAKS HI		
J244-7	A12-21	A	111	LGC +14 VDC SUPPLY NOISE/PEAKS LO		
J244-8	A13-4	A	112	LGC +4 VDC SUPPLY LEVEL HI		
J244-9	A13-42	A	113	LGC +4 VDC SUPPLY LEVEL LO		
J244-10	A13-17	A	114	LGC +4 VDC SUPPLY NOISE/PEAKS HI		

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
(CONT.) J244				CONNECTOR, RECEPTACLE, ELECTRICAL 1897247-001 FIG. 11		
J244-11	A13-21	A	115	LGC +4 VDC SUPPLY NOISE/PEAKS LO		
J244-12	A14-4	A	116	CDU +4 VDC SUPPLY LEVEL HI		
J244-13	A14-42	A	117	CDU +4 VDC SUPPLY LEVEL LO		
J244-14	A14-17	A	118	CDU +4 VDC SUPPLY NOISE/PEAKS HI		
J244-15	A14-21	A	119	CDU +4 VDC SUPPLY NOISE/PEAKS LO		
J244-18	J1-43	A	94	-28 VDC T.P. HI		
J244-19	E3-8	A	80	-28 VDC T.P. LO		
J244-20	A9-40	A	133	800 CPS 5 PCT 90 DEG SUPPLY HI		
J244-21	A9-32	A	134	800 CPS 5 PCT 90 DEG SUPPLY LO		
J244-22	A8-17	A	147	800 CPS 5 PCT 0 DEG SUPPLY HI		
J244-23	A8-9	A	148	800 CPS 5 PCT 0 DEG SUPPLY LO		
J244-24	A15-4	A	120	IMU OPERATE +28 VDC LEVEL HI		
J244-25	A15-42	A	121	IMU OPERATE +28 VDC LEVEL LO		
J244-26	A15-17	A	123	IMU OPERATE +28 VDC NOISE/PEAKS HI		
J244-27	A15-21	A	124	IMU OPERATE +28 VDC NOISE/PEAKS LO		
J244-28	A16-4	A	125	IMU STANDBY +28 VDC LEVEL HI		
J244-29	A16-42	A	126	IMU STANDBY +28 VDC LEVEL LO		
J244-30	A16-17	A	127	IMU STANDBY +28 VDC NOISE/PEAKS HI		
J244-31	A16-21	A	128	IMU STANDBY +28 VDC NOISE/PEAKS LO		
J244-32	A17-4	A	129	LGC OPERATE +28 VDC LEVEL HI		
J244-33	A17-42	A	130	LGC OPERATE +28 VDC LEVEL LO		
J244-34	A17-17	A	131	LGC OPERATE +28 VDC NOISE/PEAKS HI		
J244-35	A17-21	A	132	LGC OPERATE +28 VDC NOISE/PEAKS LO		
J244-36	A8-40	A	149	IG SERVO ERROR TOTAL HI		
J244-37	A8-32	A	150	IG SERVO ERROR TOTAL LO		
J244-38	J1-31	A	160	IG TORQUE MOTOR CURRENT MON		
J244-39	E2-8	A	157	TM CURRENT LO		
J244-40	A7-17	A	151	MG SERVO ERROR TOTAL HI		
J244-41	A7-9	A	152	MG SERVO ERROR TOTAL LO		
J244-42	J1-30	A	161	MG TORQUE MOTOR CURRENT MON		
J244-43	E2-8	A	158	TM CURRENT LO		
J244-44	A7-40	A	153	OG SERVO ERROR TOTAL HI		
J244-45	A7-32	A	154	OG SERVO ERROR TOTAL LO		
J244-46	J1-51	A	162	OG TORQUE MOTOR CURRENT MON		
J244-47	E2-8	A	159	TM CURRENT LO		

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
(CONT.) J244				CONNECTOR, RECEPTACLE, ELECTRICAL 1897247-001 FIG. 11		
J244-48	A6-17	A	175	IG CDU FINE ERROR HI		
J244-49	A6-9	A	176	IG CDU FINE ERROR LO		
J244-50	A6-40	A	177	IG CDU COARSE ERROR HI		
J244-51	A6-32	A	178	IG CDU COARSE ERROR LO		
J244-52	A5-17	A	179	MG CDU FINE ERROR HI		
J244-53	A5-9	A	180	MG CDU FINE ERROR LO		
J244-54	A5-40	A	181	MG CDU COARSE ERROR HI		
J244-55	A5-32	A	182	MG CDU COARSE ERROR LO		
J244-56	A4-17	A	183	OG CDU FINE ERROR HI		
J244-57	A4-9	A	184	OG CDU FINE ERROR LO		
J244-58	A4-40	A	185	OG CDU COARSE ERROR HI		
J244-59	A4-32	A	186	OG CDU COARSE ERROR LO		
J244-60	J1-74	A	163	IRIG TEMPERATURE HI		
J244-61	J1-75	A	164	IRIG TEMPERATURE LO		
J244-62	A3-17	A	187	SHAFT CDU FINE ERROR HI		
J244-63	A3-9	A	188	SHAFT CDU FINE ERROR LO		
J244-64	A3-40	A	189	SHAFT CDU COARSE ERROR HI		
J244-65	A3-32	A	190	SHAFT CDU COARSE ERROR LO		
J244-66	A2-17	A	191	TRUN CDU FINE ERROR HI		
J244-67	A2-9	A	192	TRUN CDU FINE ERROR LO		
J244-68	A2-40	A	193	TRUN CDU COARSE ERROR HI		
J244-69	A2-32	A	194	TRUN CDU COARSE ERROR LO		
J244-70	A24-4	A	202	LGC TEMPERATURE HI		
J244-71	J1-57	A	197	TEMP MON 1 (LGC) LO		
J244-72	A24-6	A	203	CAL MOD TEMP HI		
J244-73	J1-34	A	199	CAL MOD TEMP LO		
J244-74	A24-8	A	204	PSA TEMPERATURE HI		
J244-75	J1-17	A	201	800 CPS POWER SUPPLY TEMPERATURE LO		
J244-76	A20-3	A	37	PHASE DIFF-3.2 KC SUPP/LGC SYNC HI		
J244-77	A20-14	A	38	PHASE DIFF-3.2 KC SUPP/LGC SYNC LO		
J244-78	A18-8	A	86	COMMON (IMU BLOWER CURRENT)		
J244-79	J1-25	A	77	BLOWER TELEMETRY DISCRETE		

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S1				TOGGLE SWITCH 1016265-004 (ALTERNATE ACTION) FIG. 16		
S1-1	A10-19	A	28	+28 VDC IMU STANDBY HI		
S1-1	A20-H1	A	45	+28 VDC IMU STANDBY HI		
S1-2	XF1-1	A	42	+28 VDC IMU STANDBY HI		
S2				ROTARY SWITCH 1897379-001 (SELECTOR) FIG. 17		
S2-2	A24K1-3	A	13	BUFFERED 3200 CPS SUPP HI		
S2-3	A21K3-3	A	11	X PIPA G/S OUTPUT HI		
S2-4	A21K2-3	A	9	Y PIPA G/S OUTPUT HI		
S2-5	A21K1-3	A	7	Z PIPA G/S OUTPUT HI		
S2-6	A24K1-8	A	18	SELECTED PIPA G/S OUTPUT		
S2-C1	A9-1	A	19	PIPA G/S OUTPUT SELECT HI		
S3				TOGGLE SWITCH 1016265-004 (ALTERNATE ACTION) FIG. 16		
S3-1	J1-6	A	44	INHIBIT COMPUTER POWER FAIL		
S3-2	A22K1-3	A	46	INHIBIT COMPUTER POWER FAIL		
S4				TOGGLE SWITCH 1016265-006 (MOMENTARY) FIG. 16		
S4-1	J1-76	A	59	OG SERVO AMP TEST INPUT		
S4-1	A23K1-3	A	60	OG SERVO AMP TEST INPUT		
S4-2	A23K1-2	A	61	MANUAL OG SERVO AMP TEST INPUT		

FROM	TO	LEAD NO		CIRCUIT FUNCTION	PEN NOTE	NET. NO.
S5				TOGGLE SWITCH 1016265-006 (MOMENTARY) FIG. 16		
S5-1	J1-63	A	64	MG SERVO AMP TEST INPUT		
S5-1	A23K2-3	A	65	MG SERVO AMP TEST INPUT		
S5-2	A23K2-2	A	66	MANUAL MG SERVO AMP TEST INPUT		
S6				TOGGLE SWITCH 1016265-006 (MOMENTARY) FIG. 16		
S6-1	J1-77	A	69	IG SERVO AMP TEST INPUT		
S6-1	A23K3-3	A	70	IG SERVO AMP TEST INPUT		
S6-2	A23K3-2	A	71	MANUAL IG SERVO AMP TEST INPUT		
SHIEDS						
SHLD OFA74	J1-48	A	74A	UPLINK I SHIELD		
SHLD OFA75	J1-46	A	75A	UPLINK D SHIELD		
XF1				FUSE HOLDER MS26527-1 FIG. 15		
XF1-1	S1-2	A	42	+28 VDC IMU STANDBY HI		
XF1-2	J1-66	A	39	+28 VDC IMU STANDBY HI		
XF1-2	J1-67	A	40	+28 VDC IMU STANDBY HI		
XF1-2	J1-68	A	41	+28 VDC IMU STANDBY HI		

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPD
	A	MAT'L WAS "GRADE 70"	DO.66619	14 NOV 67	LGC / LJT
	B	INITIAL RELEASE CLASS A PER TDRR 35564		8 FEB 68	27 NOV 67

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER PLUS APPLICABLE DASH NO. PER MIL-STD-130 (ES267).
3. EDGES MUST BE FREE FROM TEARS.
4. BREAKOUT PERMISSIBLE IN THIS AREA.

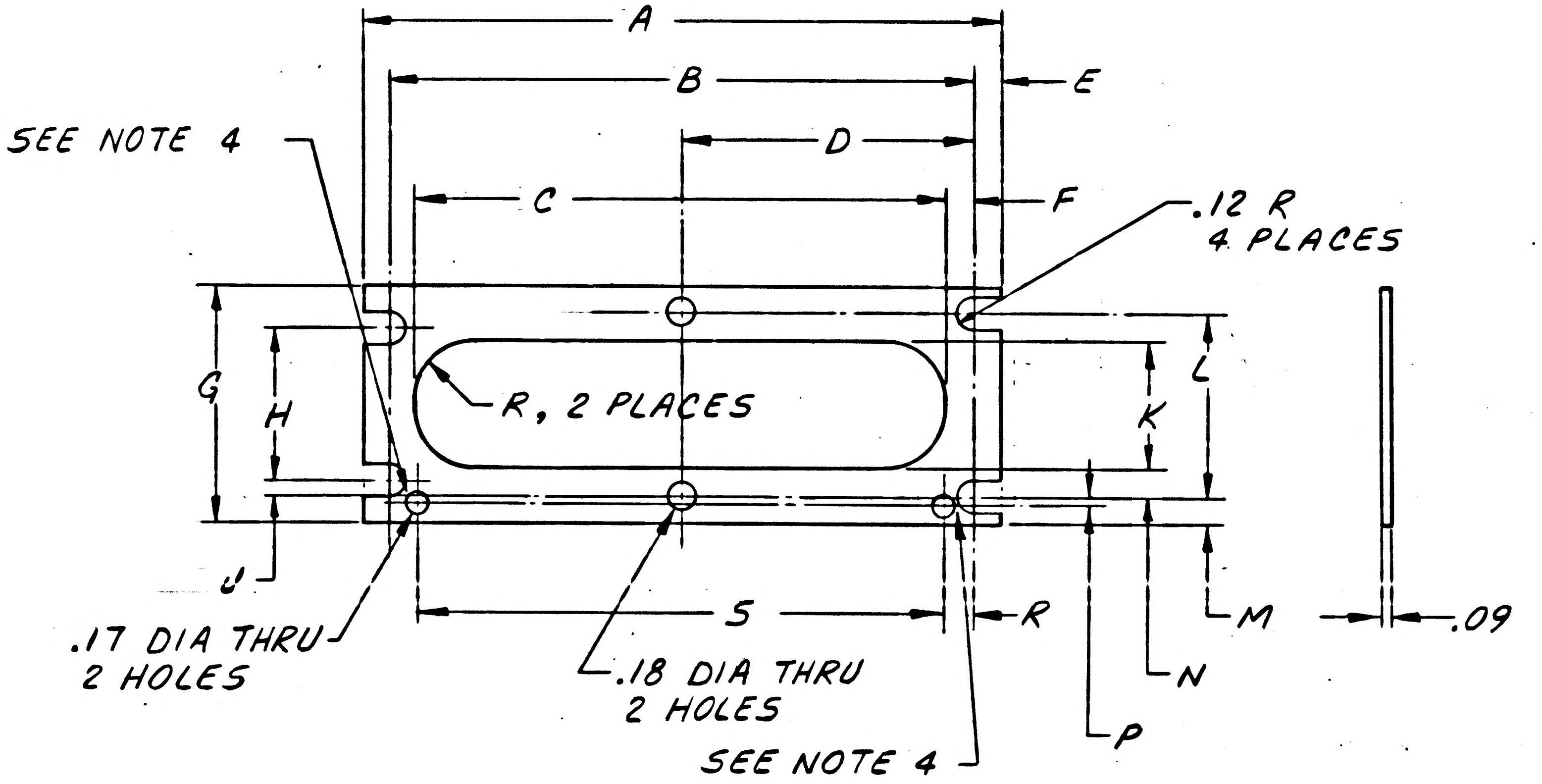


TABLE OF DIMENSIONS

PART NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
6900163-001	5.43	5.00	4.54	2.50	.21	.24	1.99	1.31	.12	1.10	1.56	.21	.24	.06	.25	4.50
6900163-002	6.05	5.68	5.29	2.84	.18	.20	1.74	1.06	.12	.85	1.31	.21	.24	.06	.25	5.43
6900163-003	5.05	4.75	4.23	2.37	.15	.25	1.68	1.00	.12	.85	1.25	.21	.19	.06	.31	4.12

APPLICABLE DASH NO.	NEXT ASSY	USED ON
003	6900068-021	6900001-031
002	6900069-021	6900001-031
001	6900070-021	6900001-031
	APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SILICONE RUBBER FED SPEC ZZ R 765 CLASS II B GRADE 80
APPROVAL H. Erickson 10 OCT 67

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN J. REPINSKI DATE 9 OCT 67
CHECKED 10 OCT
APPROVAL R. PIERINI 10 OCT 67
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GASKET, COVER

SIZE C
CODE IDENT NO. 99974
6900163
SCALE —
SHEET 1 OF 1

MIL-1092C K

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPD
	A	MATL WAS "GRADE 70"	D.O. 66619	14 Nov 67	LGC LJT
	B	INITIAL RELEASE CLASS A PER TDRR 35564		8 Feb 68	27 Nov 67
	C	REVISED PER TDRR 35718		29 FEB 68	JJJ

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER PLUS APPLICABLE DASH NO. PER MIL-STD-130 (ES267).
3. EDGES MUST BE FREE FROM TEARS.
4. BREAKOUT PERMISSIBLE IN THIS AREA.
5. MATERIAL: SILICONE RUBBER (COLOR OPTIONAL) FED SPEC ZZ-R-765A, CLASS III.

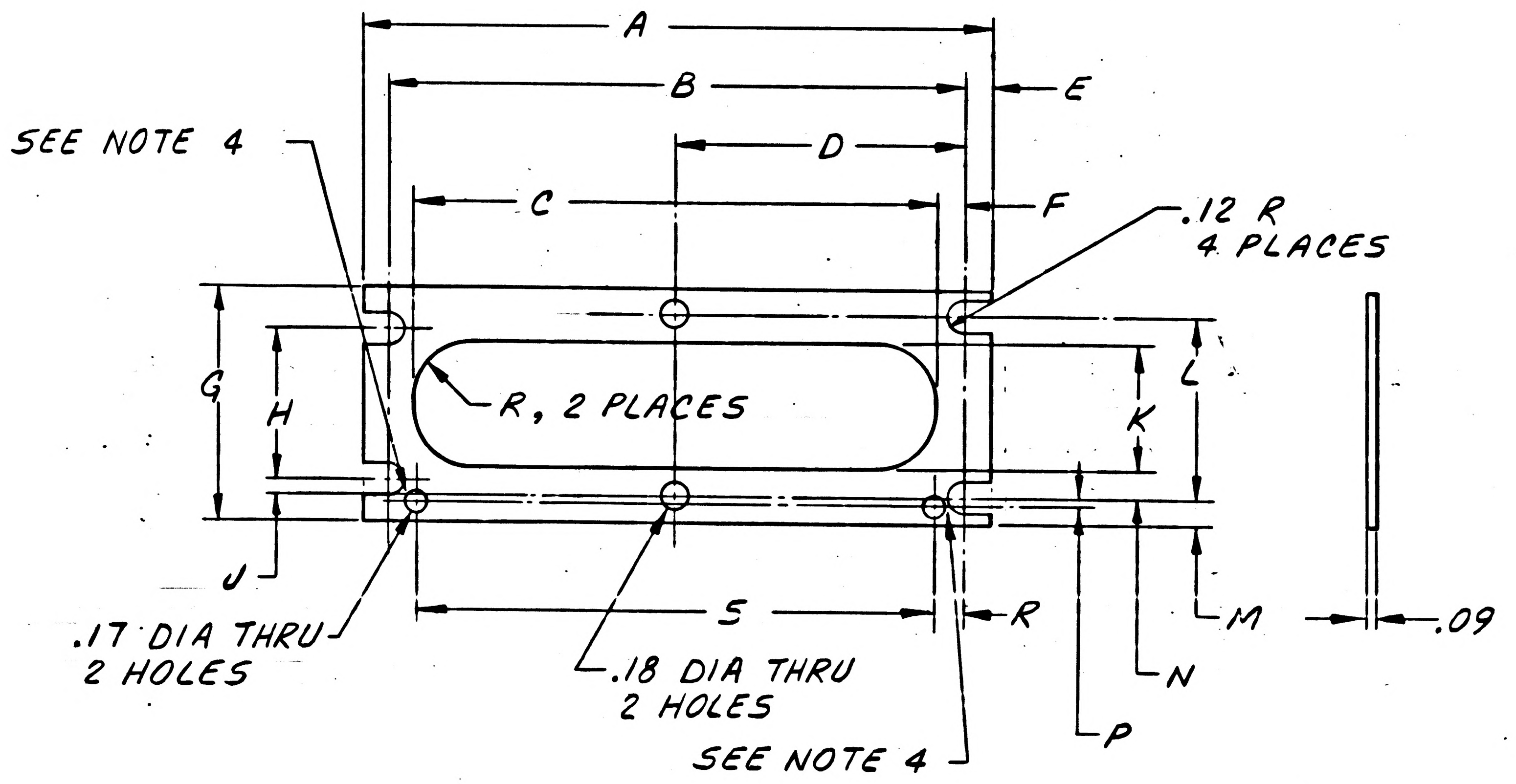


TABLE OF DIMENSIONS

PART NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
6900163-001	5.43	5.00	4.54	2.50	.21	.24	1.99	1.31	.12	1.10	1.56	.21	.24	.06	.25	4.50
6900163-002	6.05	5.68	5.29	2.84	.18	.20	1.74	1.06	.12	.85	1.31	.21	.24	.06	.25	5.43
6900163-003	5.05	4.75	4.23	2.37	.15	.25	1.68	1.00	.12	.85	1.25	.21	.19	.06	.31	4.12

APPLICABLE DASH NO.	NEXT ASSY	USED ON
003	6900068-021	6900001-031
002	6900069-021	6900001-031
001	6900070-021	6900001-031
	APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± ___
ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
APPROVAL H. Erickson 10 Oct 67

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN J. REPINSKI DATE 9 OCT 67
CHECKED 10 OCT 67
APPROVAL R. PIERINI 10 OCT 67
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GASKET, COVER

SIZE C
CODE IDENT NO. 99974
6900163
SCALE —
SHEET 1 OF 1

MIL-1052C K

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 23500

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

ITEM NO.	DISCRIPTION OF CHANGES	EFF NO. S/N	RIB NO.	AUTHORIZATION ECP NO. OR SOW REF	DRAWING NUMBERS P/N MODIF	RFK NO.	NEW P/N
1	RETROFIT KIT FOR NAVBASE VIBRATION MON. FLIGHT	17,12,121	0100001	TWX 1709 RASPO/MIT	N/A	8100002	NA

NOTE

1. INTERPRET DWG IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN J C FUCHS 7-13-65
CHECKED
APPROVED 10/22/65
APPROVED
APPROVED MIT W Kupfer 10/26/65 A. C. METZGER
APPROVED MSC
DATE

MASTER RETROFIT
KIT LIST (MIT)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8100001
SCALE —
SHEET 1 OF 1

8100001

8102001 F

QTY	PART NUMBER	DESCRIPTION	
1	0102025	R.I.B	
1	1901878	PLATE - INDEX	
1	1901833	CDU FRAME ASSY	
1	1901304-226	PLATE - IDENTIFICATION	
4	1006783-9	SCREW, BUTTON HD	SEE NOTE 2
2	1006783-18	SCREW, BUTTON HD	SEE NOTE 2 Ⓜ
3	1902044	WEIGHT, G & N FIXTURE	
1	1902045	WEIGHT, G & N FIXTURE	
12	MS-16995-56	SCREW-HEX SOC	
3	MS-16995-68	SCREW-HEX SOC	
12	MS-35338-82	WASHER-LOCK	
3	MS-35338-83	WASHER-LOCK	
12	AN960C416	(1897006-042) WASHER-FLAT	
3	AN960C516	(1897006-052) WASHER-FLAT	

REVISIONS 16861

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	CHANGE IN ACCORDANCE WITH MXC 304400		28 OCT 64	A.N. CW
B	REVISED PER XCM 306846		12 FEB 65	
C	REVISED PER MXC-307026		15 FEB 65	CW
D	UPGRADED FOR CLASS A RELEASE PER MXC 802436		15 FEB 65	WK
E	REVISION STATUS CHANGED PER TDRR 18143		9 APR 65	JJJ EF
F	REVISED PER TDRR 24337		30 NOV 65	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
1021201	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS + - ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN 1 SEP 64 DATE
CHECKED C. Pijda 2 SEP 64
APPROVAL R.C. 3 Sep 64
MIT — per TDR
APPROVAL for E.A. WK
NASA APPROVAL
MIT APPROVAL WK 26 Feb 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31 GUIDANCE AND NAVIGATION MOUNTING FIXTURE ASSEMBLY (1900014-011)

CODE IDENT NO. 99974
SIZE B
8102001
SCALE —
SHEET 1 OF 3

MIL 10778-P

QTY	PART NUMBER	DESCRIBED	
~~1~~	~~1902220~~	~~MOUNTING PLATE~~	
2	1902221	GUIDE	
1	1902223	SUPPORT-BUFFER BOX	
1	1902224	SIDE PLATE RH	
1	1902225	SIDE PLATE LH	
2	1902222	BLOCK-CONN MTG	
4	1010400-11	CLAMP-LOOP, HINGED	SEE NOTE 2
~~1~~	~~1010400-12~~	〃	
2	1010400-6	〃	
3	1010400-5	〃	
~~1~~	~~1010400-4~~	〃	
~~3~~	~~1010400-3~~	〃	
3	1010400-1	〃	
1	1010349-4	CLAMP-LOOP, HINGED	SEE NOTE 2
2	1897193-001	CLAMP-MULT CUSH	
2	1897191-001	CLAMP-WAVE GUIDE CUSH	
1	1897191-002	CLAMP-WAVE GUIDE CUSH	
1	1897195-001	CLAMP-ASSY-RECT	
1	1897191-003	CLAMP-WAVE GUIDE CUSH	
24	AN960C8	(1897006-028) WASHER-FLAT	
12	1006783-51	SCREW-BUTTON HD	SEE NOTE 2
24	1006783-27	〃	
40	1006783-25	〃	
4	1006783-26	〃	
13	1006783-37	SCREW-BUTTON HD	SEE NOTE 2
~~6~~	~~MS16996-10~~	~~SCREW-CAP, HEX SOC.~~	

REVISIONS 16861

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	REVISED PER MXC 306846		12 FEB 65	
C	REVISED PER MXC-307026		15 FEB 65	CW
D	UPGRADED FOR CLASS A RELEASE		15 FEB 65	WK
Ⓜ E	REVISED PER TDRR 18143		9 APR 65	JJJ EF
F	REVISED PER TDRR 24337		30 NOV 65	RP

Ⓑ THIS SHEET ADDED

1021201	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 12 FEB 65
CHECKED 12 FEB 65
MIT APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
GUIDANCE & NAVIGATION MOUNTING
FIXTURE ASSEMBLY (1900014-011)

CODE IDENT NO. 99974
SIZE B
8102001
SCALE —
SHEET 2 OF 3

MIL 1077B-P

QTY	PART NUMBER	DESCRIPTION	
4	1015831-292	SCREW-FIL HD	SEE NOTE 2
4	1015831-243	SCREW-FIL HD	SEE NOTE 2
6	MS35338-81	WASHER-LOCK	
6	MS35338-80	WASHER-LOCK	
1	1902360	BRACKET-MOUNTING (INSEP ASSY)	
1	1902361	BRACKET-MOUNTING TRACKER X&Y (INSEP ASSY)	
6	1015826-300	SCREW-FIL HD	SEE NOTE 2
21	AN960C10	(1897006-017) WASHER-FLAT	
8	1006783-45	SCREW-BUTTON HD	SEE NOTE 2
1	1010400-7	CLAMP-LOOP, HINGED	
1	1010400-8	CLAMP-LOOP, HINGED	
3	1010400-9	CLAMP-LOOP, HINGED	
1	1902426	BRACKET-ELEC. CONN.	
2	1006783-20	SCREW-BUTTON HD.	
2	AN960C4	(1897006-024) WASHER-FLAT	
1	1902516	MOUNTING PLATE	

REVISIONS 16861

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	REVISED PER MXC306846		12 FEB 65	
C	REVISED PER MXC-307026		15 FEB 65	
D	UPGRADED FOR CLASS A RELEASE		15 FEB 65	WK
F	REVISED PER TDRR 24337		30 NOV 65	

Ⓑ **THIS SHEET ADDED**

NEXT ASSY	USED ON
1021201	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − | DECIMALS + — − | ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 12 FEB 65
CHECKED 12 FEB 65
APPROVAL MIT – per TDRR by W
APPROVAL per E A Olsen – WK.
NASA APPROVAL 2/20/65
MIT APPROVAL 25 Feb 65

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HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
GUIDANCE & NAVIGATION MOUNTING
FIXTURE ASSEMBLY (1900014-011)

CODE IDENT NO. 99974
SIZE B
8102001
SCALE —
SHEET 3 OF 3

MIL 10778—P

PART NUMBER	PART NAME	QTY
8102096	RETROFIT KIT FOR: NECP A31 PSA/SJB (1900268-021)	1
8102019	RETROFIT KIT FOR: OPTICS INERTIAL TEST SET (1900005-021)	1
8102034	RETROFIT KIT FOR: NECP-A31 PURGE AND FILL FIXTURE (1900803-011)	1
8102036	RETROFIT KIT FOR: NECP-A31 PSA MOUNTING FIXTURE (1900606-011)	1
8102057	RETROFIT KIT FOR: SIMULATOR SET, LOAD AND SIGNAL (1900797-011)	1
8102063	RETROFIT KIT FOR NECP A31 - AUX. BATTERY PACK	1
8102062	RETROFIT KIT FOR: NECP A31, INERTIAL COMPONENTS TEMP CONTROLLER (1900342-011)	1
1902046	OPTICS CONTROLLER, REMOTE (SERIES 100)	1
1902195	GSE/PSA JUNCTION BOX BLOCK I SERIES 100	
8102073	RETROFIT KIT FOR: NECP-A31 OPTICS NAV BASE MOUNTING FIXTURE	
8102090	RETROFIT KIT FOR: NECP-A31 FIXTURE, HANDLING AND INSTALLATION, GUIDANCE AND NAVIGATION HARNESS (1901846-011)	

REVISIONS 17841

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
P	UPGRADED TO CLASS 'A' PER TDRR 17841	—	11-MAR-65	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1021201	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F Koracin DATE 25 AUG 64
CHECKED 26 AUG 64
APPROVAL 26 AUG 64
APPROVAL 3/4/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT
NECP A31
SERIES 100 CHANGES

CODE IDENT NO.
SIZE B 8102002
SCALE NONE
SHEET 1 OF 1

MIL 10778—P

PART NUMBER	PART NAME	QTY
8102096	RETROFIT KIT FOR: NECP A31 PSA/SJB (1900268-021)	1
8102098	RETROFIT KIT FOR: COOLANT HOSES (1900866-011), (1900867-011) (1901663-011) G & N TESTING	*
8102019	RETROFIT KIT FOR: OPTICS INERTIAL TEST SET (1900005-021)	1
8102034	RETROFIT KIT FOR: NECP-A31 PURGE AND FILL FIXTURE (1900803-011)	1
8102036	RETROFIT KIT FOR: NECP-A31 PSA MOUNTING FIXTURE (1900606-011)	1
8102099	RETROFIT KIT FOR: COOLANT HOSES (1900866-021), (1900867-021), (1901663-021) ISS/OSS TESTING	*
8102057	RETROFIT KIT FOR: SIMULATOR SET, LOAD AND SIGNAL (1900797-011)	1
8102063	RETROFIT KIT FOR NECP A31 - AUX. BATTERY PACK	1
8102062	RETROFIT KIT FOR: NECP A31, INERTIAL COMPONENTS TEMP CONTROLLER (1900342-011)	1
1902046	OPTICS CONTROLLER, REMOTE (SERIES 100)	1
1902195	GSE/PSA JUNCTION BOX BLOCK I SERIES 100	
8102073	RETROFIT KIT FOR. NECP-A31 OPTICS NAV BASE MOUNTING FIXTURE	
8102090	RETROFIT KIT FOR: NECP-A31 FIXTURE HANDLING AND INSTALLATION, GUIDANCE AND NAVIGATION HARNESS (1901846-011)	

REVISIONS 17841

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
P	UPGRADED TO CLASS 'A' PER TDRR 17841	—	11-MAR-65	H.F.H.
R	REVISED PER TDRR 20497.	—	2 JULY 65	WJR MEM

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

* TO MODIFY A UNIVERSAL TEST STATION, ONE (1) KIT P/N 8102098 & ONE (1) KIT P/N 8102099 IS REQUIRED.

NEXT ASSY	USED ON
1021201	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+— +— +—
-— -— -—
DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F Koracin DATE 25 AUG 64
CHECKED 26 AUG 64
APPROVAL 26 AUG 64
APPROVAL 3/2/65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT
NECP A31
SERIES 100 CHANGES

CODE IDENT NO. 99974
SIZE B
8102002
SCALE NONE
SHEET 1 OF 1

MIL 10778-P

REVISIONS TDRR 16466				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
D	UPGRADED TO CLASS A [redacted]		5-FEB-65	A.F.W.

PART NUMBER	PART NAME	QTY
8102015	RETROFIT KIT, G & N MOUNTING FIXTURE ASSY (1900014-011)	1
8102005	RETROFIT KIT FOR: REMOTE OPTICS CONTROLLER	1
8102018	RETROFIT KIT FOR: OPTICS INERTIAL TEST SET	1
8102014	RETROFIT KIT FOR: NECP A32 PSA/SJB (1900268-021)	1

NOTE:
INTERPRET DRAWING IN ACCORDANCE
WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1021201	1201201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F Koracin DATE 25 AUG 64
CHECKED 26 AUG 64
APPROVAL 26 Aug 64
APPROVAL J. M. Watson 2-16-65
NASA APPROVAL 2/17/65
MIT APPROVAL 17 Feb 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT
NECP A32 BLOCK 1
MARRIAGE CHANGES

CODE IDENT NO.
SIZE B
8102003
SCALE NONE
SHEET 1 OF 1

MIL 10778-P

QTY	PART NUMBER	DESCRIPTION
1	0102024	R.I.B.
1	1016373-001	FILTER, EXHAUST, VAC PUMP
1	1016171-001	SEAL CHANNEL, 21" LONG
1	1901304-240	NAMEPLATE
1	1902117-003	BELT GUARD
2	1902117-004	BOLTS
2	1902117-005	WASHERS
2	1902117-006	NUTS
1	1902130	CAM, CONTROL
1	1902131	PLATE, DOWEL RETAINING
1	1902132	HANDLE, VALVE
3	AN507C420-12	SCREWS
1	1017424-46	PIN, DOWEL
4	MS-35233-2	SCREWS
2	1016142-003	FILTER, INLINE
1	1902125	STENCIL, MARKING
2	1897185-021	PACKING, PREFORMED
2	1897185-023	PACKING, PREFORMED

NOTES:

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REVISIONS 17850

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
K	UPGRADED TO CLASS A PER TDRR 17850		22 MAR -65	X.F.W.

K	K
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON
8102002	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E.F. Jones DATE 9 SEP 64
CHECKED W. Finde 10 SEP 64
APPROVAL R.H. Stephens, 10 SEP 64
APPROVAL L. Jekman 3/24/65
NASA APPROVAL A. C. Mit MAR 26 1965
MIT APPROVAL W Kupfer MAR 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
PURGE AND FILL FIXTURE
(1900803-011)

CODE IDENT NO.
SIZE B
8102034
SCALE —
SHEET 1 OF 2

MIL 10778—F

8102034 K

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
K	UPGRADED TO CLASS A PER TDRR 17850		22 MAR 65	

REVISIONS 17850

QTY	PART NUMBER	DESCRIPTION
3	MS20822-6K	ELBOW, FLARED TUBE & PIPE THREAD 90° (1896851-508)
1	MS20822-6-2K	ELBOW, FLARED TUBE & PIPE THREAD 90° (1896851-507)
6	AN816-6C	(1896850-008) NIPPLE FLARED TUBE & PIPE THREAD
1	AN816-6-2C	(1896850-007) NIPPLE FLARED TUBE & PIPE THREAD
11	AN817-6C	NUT-SLEEVE, COUPLING (1896891-206)
1	MS20826-6K	TEE-FLARED TUBE WITH PIPE THD ON RUN (1896894-606)
2	AN833-6C	ELBOW-FLARED TUBE & BULKHEAD UNIV 90° (1896892-206)
2	AN894C6-4	BUSHING-SCREW THREAD EXPANDER (1896897-305)
3	AN912-1C	BUSHING-REDUCER (1896895-301)
1	AN917-2C	TEE-INTERNAL PIPE THREAD (1896896-302)
2	AN924-6C	NUT-FLARED TUBE, BULKHEAD & UNIV FITTING (1896893-306)
2	AN960-C916	(1897006-092) WASHER, FLAT
1	1016148-005	VALVE, FLOW CONTROL
2	MS21921-6K	SLEEVE, COUPLING FLARELESS (1896863-406)
2	MS21922-6C	NUT, SLEEVE COUPLING FLARELESS (1896864-156)
AR	MIL-T-8506	TUBING, STEEL, CORROSION-RESISTANT, (304) ANNEALED TYPE I
4	AN773-6	FITTING ASSEMBLY
AR	1016230-001	TUBING, POLYURETHANE (16 FEET)
AR	1016230-002	TUBING, POLYURETHANE (5 FEET)

NEXT ASSY	USED ON
8102002	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — - — DECIMALS + — - — ANGLES + — - —
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN M. J. Yamasaki DATE 12 FEB 65
CHECKED 5 ... 65
APPROVAL H. Brinkman 3/1/65
APPROVAL L. Jedman 3/29/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL W. Kupfer MAR 25 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
PURGE AND FILL FIXTURE
(1900803-011)

CODE IDENT NO.
SIZE B
8102034
SCALE —
SHEET 2 OF 2

MIL 1077B P

REVISIONS 17838				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
J	UPGRADED TO CLASS A PER TDRR 17838		10-MAR-65	

QTY	PART NUMBER	DESCRIPTION	
1	0102014	R.I.B.	
1	1015864-167	INSULATION SLEEVING	
32	MS3192A20A	(1896855-020) CONTACT, PIN	
44	MS3193A20A	(1896877-020) CONTACT, SOCKET	
2	MS90078-15-1	(1897077-115) FUSE, STYLE F02	
1	1901952	WIRE LIST	
4	1010490-198	INSULATION-SLEEVING, ELECTRICAL, HT. SHRINK	SEE NOTE 2
4	1000242-007	FERRULE, ELECTRICAL CONDUCTOR	SEE NOTE 2
4	1000243-003	FERRULE, ELECTRICAL CONDUCTOR	SEE NOTE 2
4	1000242-004	FERRULE, ELECTRICAL CONDUCTOR	SEE NOTE 2
1	1901304-228	NAME PLATE	
4	MS35233-2	SCREW, PAN HD	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

J	J	J
H	G	G
G	G	G
F	F	F
E	E	E
D	D	D
SHEET 1	SHEET 2	SHEET 3
REVISION STATUS OF SHEETS		

8102019	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS + — ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. J. Fluder DATE 15-SEP-64
CHECKED C. Pijda 17 SEP 64
APPROVAL 17 SEP 64
APPROVAL J. M. Watson 3-25-65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
GSE JUNCTION BOX
(1900433-021)

CODE IDENT NO.
SIZE B
8102035
SCALE —
SHEET 1 OF 3

MIL 10778-P

J 8102035

REVISIONS 17838				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
J	UPGRADED TO CLASS A PER TDRR 17838	—	10-MAR-65	J.F.W.

QTY	PART NUMBER	DESCRIPTION	
4	1000243-008	FERRULE, ELECTRICAL CONDUCTOR	SEE NOTE 2
5	1010490-196	INSULATION-SLEEVING, ELECTRICAL, HT. SHRINK	SEE NOTE 2
1	1010430-200	INSULATION-SLEEVING, ELECTRICAL, HT. SHRINK	SEE NOTE 2
2	1010490-286	INSULATION-SLEEVING, ELECTRICAL, HT. SHRINK	SEE NOTE 2
11	1015966-003	TERMINAL-TIP, CONTACT	SEE NOTE 2
4	1016006-001	SPLICE REDUCER	SEE NOTE 2
1	1902082	DECAL	
1	1902083	DECAL	
1	1902098	DECAL	
1	1902099	DECAL	
17	1015864-227	INSULATION-SLEEVING, ELECTRICAL	SEE NOTE 2
1	1015914-001	RELAY-ARMATURE	SEE NOTE 2
2	MS35216-27	SCREW, PAN HEAD	
3	1015864-225	INSULATION-SLEEVING, ELECTRICAL	SEE NOTE 2
1	MS3127E14-19S	CONNECTOR-RECEPTACLE, ELECTRICAL	

APPLICATION	
NEXT ASSY	USED ON
8102019	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. Knotek DATE 1 OCT 64
CHECKED J. GRIEB 7 OCT 64
APPROVAL J. Ziner 8 OCT 64
APPROVAL J. M. Watson 3-25-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
GSE JUNCTION BOX
(1900433-021)

CODE IDENT NO. SIZE B 8102035
SCALE —
SHEET 2 OF 3

MIL 1077B—P

8102035 J

REVISIONS 17838				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
J	UPGRADED TO CLASS A PER TDRR 17838	—	10-MAR-65	H.F.N.

QTY	PART NUMBER	DESCRIPTION	
5	1015864-226	INSULATION SLEEVING, ELECTRICAL	SEE NOTE 2
5	1010490-194	INSULATION SLEEVING, ELECT. HEAT SHRINK	SEE NOTE 2
5	1000242-012	FERRULE	SEE NOTE 2
5	1000243-014	FERRULE	SEE NOTE 2
1	1900368-009	GASKET CONNECTOR	
4	MS35216-28	SCREW, PAN HEAD.	
4	AN363 C632	(1896990-261) NUT, SELF LOCKING,	
1	1016059-102	CONNECTOR PLUG, ELECT.	SEE NOTE 2
4	1015902-3	TERMINAL-LUG	SEE NOTE 2
8	1015864-194	INSULATION, SLEEVING, ELEC	
4	1015864-172	INSULATION, SLEEVING, ELEC	
4	1010490-586	INSULATION, SLEEVING, ELEC, HEAT SHRINK	SEE NOTE 2
~~1~~	~~1901658~~	~~STUD, SHOULDERED~~	
2	MS20341-4168	(1897061-205) NUT	
2	MS35338-82	WASHER, LOCK	
2	MS15795-811	WASHER, FLAT	
1	1902370	STUD, SHOULDERED	

8102019	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.W. Turner DATE 21 JAN 65
CHECKED Wilson 21 JAN 65
APPROVAL Carpenter 3-25-65
APPROVAL J. W. Watson 3-25-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP A31
GSE JUNCTION BOX
(1900433-021)

CODE IDENT NO.
SIZE B
8102035
SCALE —
SHEET 3 OF 3

MIL 10778-P

8102036 D

REVISIONS 17845				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
D	UPGRADED TO CLASS A PER TDRR 17845		22 MAR 65	

QTY	PART NUMBER	DESCRIPTION	
1	0102020	R.I.B.	
2	1016359-028	CLAMP, LOOP	SEE NOTE 2
2	1016359-228	CLAMP, LOOP	SEE NOTE 2
3	1016359-030	CLAMP, LOOP	SEE NOTE 2
3	1016359-230	CLAMP, LOOP	SEE NOTE 2
1	1016360-020	CLAMP, LOOP	SEE NOTE 2
1	1016360-220	CLAMP, LOOP	SEE NOTE 2
8	1016151-006	NUT-SELF LOCKING	SEE NOTE 2
7	1016151-010	NUT-SELF LOCKING	SEE NOTE 2
8	MS35216-29	SCREW, MACHINE, PAN HEAD	
7	1006783-46	SCREW, BUTTON HEAD, HEX SOCKET	SEE NOTE 2
5	AN960-C10	(1897006-017) WASHER, PLAIN, FLAT	
8	AN960-C6	(1897006-026) WASHER, PLAIN, FLAT	
1	1016359-032	CLAMP, LOOP	SEE NOTE 2
1	1016359-232	CLAMP, LOOP	SEE NOTE 2
1	1901304-239	NAMEPLATE	
2	1015843-12	NUT, CLINCH, SELF LOCKING	SEE NOTE 2
4	1015843-11	NUT CLINCH, SELF LOCKING	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

8102002	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluder DATE 16-SEP 64
CHECKED C. Pioda 16 SEP 64
APPROVAL DRShumann 18 SEP 64
APPROVAL L Gehman 3/23/65
MAR 26 1965
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
PSA MOUNTING FIXTURE
(1900606-011)

CODE IDENT NO. SIZE B 8102036
SCALE —— SHEET 1 OF 1

MIL 10778-F

REVISIONS 17836

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
J	UPGRADED TO CLASS A PER TDRR 17836	—	10-MAR-65	

QTY	PART NUMBER	DESCRIPTION	
1	0102012	R.I.B	
1	1015869-641	LENS ASSEMBLY	SEE NOTE 2
1	1015869-643	LENS ASSEMBLY	SEE NOTE 2
2	1015837-001	RELAY, ARMATURE	SEE NOTE 2
3	1896966-004	DIODE, IN645	
5	1015817-424	PIN, CONTACT	SEE NOTE 2
8	1015818-424	SOCKET, CONTACT	SEE NOTE 2
24	MS3192-A20A	(1896855-020) CONTACT-ELEC, PIN, CRIMP	
39	1015864-107	INSULATION-SLEEVING, ELEC. (CLEAR)	SEE NOTE 2
16	1015864-109	INSULATION-SLEEVING, ELEC. (CLEAR)	SEE NOTE 2
1	1901304-156	NAMEPLATE, APOLLO, G&N	
4	MS35233-2	SCREW PAN HEAD	
4	MS35216-24	SCREW PAN HEAD	
1	1902094	WIRE LIST	
1	1015869-972	LENS ASSEMBLY	SEE NOTE 2
1	1015869-34	SWITH ASSEMBLY	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

J	J
H	G
G	G
F	F
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

8102020	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluder DATE 14-SEP-64
CHECKED C. Pijda 16 SEP 64
APPROVAL J. P. Nurse 18 SEP 64
APPROVAL J. M. Watson 3-22-65
NASA APPROVAL MAR 5 1965
MIT APPROVAL MAR 5 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
TEST CONTROL
(190059-021)

CODE IDENT NO.
SIZE B
8102037
SCALE ——
SHEET 1 OF 2

MIL 10778--P

8102037 J

QTY	PART NUMBER	DESCRIPTION	
1	1902327	DECAL	
1	1902328	DECAL	
1	1016006-002	SPLICE REDUCER	SEE NOTE 2
1	1010490-286	INSULATION, SLEEVING	
2	1015818-420	SOCKET, CONTACT	
2	1015817-420	PIN, CONTACT	SEE NOTE 2
2	MS90078-15-1	(1897077-115) FUSE	
1	1015869-22	DIFFUSER, HORIZONTAL SPLIT	SEE NOTE 2

REVISIONS 17836

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
J	UPGRADED TO CLASS A PER TDRR 17836	—	10-MAR-65	

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A Kauffman DATE 3 FEB 65
CHECKED 4 FEB 65
APPROVAL
APPROVAL J. M. Watson 3-22-6-
NASA APPROVAL MAR 25 1965
MIT APPROVAL MAR 25 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
TEST CONTROL
(1900059-021)

CODE IDENT NO.
SIZE B
8102037
SCALE —
SHEET 2 OF 2

MIL 10778-F

8102037 K

REVISIONS 17836				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
J	UPGRADED TO CLASS A PER TDRR 17836	—	0-MAR-65	G.F.H.
K	REVISED PER TDRR 21009		26 JUL 65	WJR. W.S.

QTY	PART NUMBER	DESCRIPTION	
1	0102012	R.I.B	
1	1015869-641	LENS ASSEMBLY	SEE NOTE 2
1	1015869-643	LENS ASSEMBLY	SEE NOTE 2
2	1015837-001	RELAY, ARMATURE	SEE NOTE 2
3	1896966-004	DIODE, IN645	
5	1015817-424	PIN, CONTACT	SEE NOTE 2
9	1015818-424	SOCKET, CONTACT	SEE NOTE 2
25	MS3192-A20A	(1896855-020)CONTACT-ELEC, PIN, CRIMP	
39	1015864-107	INSULATION-SLEEVING, ELEC. (CLEAR)	SEE NOTE 2
16	1015864-109	INSULATION-SLEEVING, ELEC. (CLEAR)	SEE NOTE 2
1	1901304-156	NAMEPLATE, APOLLO, G&N	
4	MS35233-2	SCREW PAN HEAD	
4	MS35216-24	SCREW PAN HEAD	
1	1902094	WIRE LIST	
1	1015869-972	LENS ASSEMBLY	SEE NOTE 2
1	1015869-34	SWITH ASSEMBLY	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9 497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fleder DATE 14 SEP 64
CHECKED C. Piojda 16 SEP 64
APPROVAL J. P. Nurse 18 SEP 64
APPROVAL J. M. Watson 3-22-65
NASA APPROVAL 5 1965
MIT APPROVAL W. Gupfer MAR 5 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
TEST CONTROL
(190059-021)

CODE IDENT NO.
SIZE B
8102037
SCALE —
SHEET 1 OF 2

MIL 10778—P

8102037 K

QTY	PART NUMBER	DESCRIPTION	
1	1902327	DECAL	
1	1902328	DECAL	
1	1016006-002	SPLICE REDUCER	SEE NOTE 2
1	1010490-286	INSULATION, SLEEVING	
2	1015818-420	SOCKET, CONTACT	
2	1015817-420	PIN, CONTACT	SEE NOTE 2
2	MS90078-15-1	(1897077-115) FUSE	
1	1015869-22	DIFFUSER, HORIZONTAL SPLIT	SEE NOTE 2

REVISIONS 17836

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
J	UPGRADED TO CLASS A PER TDRR 17836	—	10-MAR-65	A.F.W.
K	REVISION STATUS CHANGED		26 JUL 65	WJR WF

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A Rauffman DATE 3 FEB 65
CHECKED 4 FEB 65
APPROVAL
APPROVAL J. M. Watson 3-22-6
NASA APPROVAL MAR 25 1965
MIT APPROVAL MAR 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
TEST CONTROL
(1900059-021)

CODE IDENT NO. SIZE B 8102037
SCALE — SHEET 2 OF 2

MIL 10778-F

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
G	-	UPGRADED TO CLASS "A" PER TDRR17837	—	25 MAR 65	JAC
H		REVISED PER TDRR 21149		31 JUL 65	WJR RWH

REVISIONS 17837

QTY	PART NUMBER	DESCRIPTION	
1	0102021	R.I.B	
1	1016273-003	RELAY	SEE NOTE 2
1	MS25036-2	TERMINAL, LUG CRIMP	
1	1902279	ADAPTER, RELAY	
2	AN960C4	(1897006-024) WASHER, FLAT	
8	AN960C8	(1897006-028) WASHER, FLAT	
2	MS35275-16	SCREW, FIL HD	
4	MS35275-45	SCREW, FIL HD	
4	MS35275-46	SCREW, FIL HD	
2	1016151-004	NUT, SELF LOCKING	SEE NOTE 2
8	1016151-008	NUT, SELF LOCKING	SEE NOTE 2
2	MS25068-23	SWITCH, TOGGLE	
1	1901304-234	NAMEPLATE	
4	MS35233-2	SCREW	
2	IN1124A	(1896966-015) DIODE, MIL-S-19500	
1	1015869-280	LIGHT-INDICATOR	SEE NOTE 2
1	1015869-281	LIGHT-INDICATOR	SEE NOTE 2
2	1015869-22	LIGHT-INDICATOR	SEE NOTE 2
1	1902392	HOUSING, CIRCUIT SWITCH	
1	1902393	BRACKET, DIODE	
1	1902359	WIRING HARNESS "A"	
1	1902356	GUARD, TERMINAL BOARD	
1	1902417	DECAL	
2	1902413	DECAL	
2	1015902-003	TERMINAL, LUG	SEE NOTE 2
1	1902202	WIRE LIST, COOLANT SUPPLY RETROFIT KIT	
50	1015864-139	SLEEVING, INSULATION-ELECT.	

NOTES –

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9 497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN	A.J. FLUDER	15 SEP 64
CHECKED	C. PIOJDA	17 SEP 64
APPROVAL	R.H. STUEBING	17 SEP 64
APPROVAL	C Sperling	3/22/65
NASA APPROVAL		MAR 25 1965
MIT APPROVAL		

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
COOLANT SUPPLY
(1900995)

CODE IDENT NO. SIZE C 8102041

SCALE — SHEET 1 OF 1

MIL 1077C—P

8102044 G

REVISIONS 17839				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
G	UPGRADED TO CLASS 'A' PER TDRR 17839	—	15-MAR-65	A.J.N.

QTY	PART NUMBER	DESCRIPTION	
1	0102015	R.I.B.	
6	RN60C1101F	(1896976-293) RESISTOR	
3	RN60C1782F	(1896976-408) RESISTOR	
6	1016166-009	JACK, TEST POINT	SEE NOTE 2
12	1016166-004	JACK, TEST POINT	SEE NOTE 2
12	1016166-006	JACK, TEST POINT	SEE NOTE 2
2	1015802-004	RELAY ARMATURE.	SEE NOTE 2
1	MS35058-22	SWITCH, TOGGLE	
16	1015864-109	INSULATION SLEEVING ELEC. CLEAR	SEE NOTE 2
26	1010738-005	CONTACT, ELEC. PIN	SEE NOTE 2
13	M93192A20A	(1896855-020) CONTACT, PIN	
1	1902326-011	AMPLIFIER ASSY BANDPASS	
1	1901304-160	NAME PLATE	
4	MS35233-2	SCREW, PAN HEAD	
2	1015873-008	FUSE HOLDER-INDICATING	SEE NOTE 2
1	MS26572-1	FUSE HOLDER-SPARE	
2	1016166-007	JACK-TEST POINT	SEE NOTE 2
3	MS90078-5-1	(1897077-105) FUSE	
6	CS13AF010K	(1896954-126) CAPACITOR, FIXED MIL-C-26655/2	
1	1902351	DECAL	
1	1902352	DECAL	

	G	G
	F	F
	E	E
	D	D
	SHEET 1	SHEET 2
REVISION STATUS OF SHEETS		

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102019	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + ___ − DECIMALS + ___ − ANGLES + ___ −
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN P.J. Fluder DATE 15-SEP-64
CHECKED C. Pijda 16 SEP 64
APPROVAL L. Baron 17 SEPT. 64
APPROVAL J. M. Watson 3-26-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
PSA TEST POINT ADAPTER ASSEMBLY (1900931-011)

CODE IDENT NO.
SIZE B
8102044
SCALE ——
SHEET 1 OF 2

MIL 10778-F

8102044 | G |

REVISIONS 17839				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
G	UPGRADED TO CLASS 'A' PER TDRR 17839	——	15-MAR-65	A. F. N.

QTY	PART NUMBER	DESCRIPTION
2	1897203-1	STANDOFF
1	1897202-1	STANDOFF
2	MS-35431-3	TERMINAL LUG
2	1006783-27	SCREW BT. HEAD
2	MS-35338-80	WASHER, LOCK
4	AN960-C4	(1897006-24) WASHER, FLAT
5	AN960-C8	(1897006-28) WASHER, FLAT
4	1016151-004	NUT, SELF LOCKING
4	1006783-28	SCREW BT. HEAD
1	1902355	BRACKET, MTG RELAY
1	1902334	WIRE LIST
2	1015860-010	SPACER
2	MS35233-52	SCREW PAN HEAD

SEE NOTE 2

8102019	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Janowiak DATE 15 FEB 65
CHECKED
APPROVAL
APPROVAL M. Watson 3-23-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL W Kupfer MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
PSA TEST POINT ADAPTER
ASSEMBLY (1900931-011)

CODE IDENT NO.
SIZE B
8102044
SCALE —
SHEET 2 OF 2

MIL 10778-F

8102044 H

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
G	UPGRADED TO CLASS 'A' PER TDRR 17839	—	15-MAR-65	A.J.N.
H	REVISED PER TDRR 22918		15 OCT 65	J.H.P. EF

REVISIONS 17839

QTY	PART NUMBER	DESCRIPTION	
1	0102015	R.I.B.	
6	RN60C1101F	(1896976-293) RESISTOR	
3	RN60C1742F	(1896976-408) RESISTOR	
6	1016166-009	JACK, TEST POINT	SEE NOTE 2
12	1016166-004	JACK, TEST POINT	SEE NOTE 2
12	1016166-006	JACK, TEST POINT	SEE NOTE 2
2	1015802-004	RELAY ARMATURE.	SEE NOTE 2
1	MS35058-22	SWITCH, TOGGLE	
16	1015864-109	INSULATION SLEEVING ELEC. CLEAR	SEE NOTE 2
26	1010738-005	CONTACT, ELEC. PIN	SEE NOTE 2
13	M39192A20A	(1896855-020) CONTACT, PIN	
1	1902326-011	AMPLIFIER ASSY BANDPASS	
1	1901304-160	NAME PLATE	
4	MS35233-2	SCREW, PAN HEAD	
2	1015873-008	FUSE HOLDER-INDICATING	SEE NOTE 2
1	MS26572-1	FUSE HOLDER-SPARE	
2	1016166-007	JACK-TEST POINT	SEE NOTE 2
3	MS90078-5-1	(1897077-105) FUSE	
6	CS13AF010K	(1896954-126) CAPACITOR,	
		FIXED MIL-C-26655/2	
1	1902351	DECAL	
1	1902352	DECAL	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102019	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS + — ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. J. Fluder DATE 15-SEP-64
CHECKED C. Pijda 16 SEP 64
APPROVAL L. BARON 17 SEPT. 64
APPROVAL J. M. Watson 3-26-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
PSA TEST POINT ADAPTER
ASSEMBLY (1900931-011)

CODE IDENT NO.
SIZE B
8102044
SCALE ——
SHEET 1 OF 2

MIL 10778-F

QTY	PART NUMBER	DESCRIPTION
2	1897203-1	STANDOFF
1	1897202-1	STANDOFF
2	MS-35431-3	TERMINAL LUG
2	1006783-27	SCREW BT. HEAD
2	MS-35338-80	WASHER, LOCK
4	AN960-C4	(1897006-24) WASHER, FLAT
5	AN960-C8	(1897006-28) WASHER, FLAT
4	1016151-004	NUT, SELF LOCKING
4	1006783-28	SCREW BT. HEAD
1	1902355	BRACKET, MTG RELAY
1	1902334	WIRE LIST
2	1015860-010	SPACER
2	MS35233-52	SCREW PAN HEAD
4	RC20GF104 J	(1896952-097) RESISTOR

SEE NOTE 2

REVISIONS 17839

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ G	UPGRADED TO CLASS 'A' PER TDRR 17839	—	15-MAR-65	H.F.W.
H	REVISED PER TDRR 22918		15 OCT 65	J.H.P. EF

8102019	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Janowiak DATE 15 FEB 65
CHECKED
APPROVAL
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL W Kupfer MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
PSA TEST POINT ADAPTER
ASSEMBLY (1900931-011)

CODE IDENT NO.
SIZE B
8102044
SCALE —
SHEET 2 OF 2

MIL 10778--P

8102046 P

ITEM NO.	QTY	PART NUMBER	DESCRIPTION	
1	1	0102012	R.I.B.	
2	1	1015869-31	SWITCH	SEE NOTE 2
3	38	1015818-424	CONTACT-SOCKET, ELECTRICAL	SEE NOTE 2
4	41	1015817-424	PIN, CONTACT, ELEC	SEE NOTE 2
5	12	1015864-107	INSULATION-SLEEVING, ELEC	SEE NOTE 2
6	100	1015864-109	INSULATION-SLEEVING, ELEC	SEE NOTE 2
~~7~~	~~1~~	~~1015817-420~~	~~PIN, CONTACT, CONNECTOR~~	~~SEE NOTE 2~~
8	20	MS3192A-20A	(1896855-020) CONTACT-ELEC, PIN, CRIMP	
9	4	MS35233-2	SCREW, MACHINE, PAN HD	

REVISIONS 17836

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
P	UPGRADED TO CLASS 'A' PER TDRR 17836.	——	15-MAR-65	A.F.W.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

P	P	P
N	M	M
M	M	M
SHEET 1	SHEET 2	SHEET 3
REVISION STATUS OF SHEETS		

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —— DECIMALS ± —— ANGLES ± ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Sauvage DATE 16 SEP 64
CHECKED C. Pasina 17 SEP 64
APPROVAL Watkins 17 SEP 64
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL
MIT APPROVAL 26 Mar 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
MONITOR PANEL
(1900055-011)

CODE IDENT NO.
SIZE B
8102046
SCALE ——
SHEET 1 OF 3

MIL 10778-P

8102046 | P

IT. NO.	QTY	PART NUMBER	DESCRIPTION	
10	1	1901304-159	NAMEPLATE	
11	1	1901646-011	VOLTAGE COMPARATOR ASSY, 3 Ø	
12	1	1901763-011	VOLTAGE COMPARATOR ASSY, DC	
13	1	RC32GF101J	(1896953-039) RESISTOR MIL-R-11/6	
14	1	RT12C2L102	(1896967-007) RESISTOR MIL-R-27208/8	
15	1	RC42GF202J	(1896951-056) RESISTOR MIL-R-11/7	
16	1	1015941-13	DIODE, ZENER 1N753A	SEE NOTE 2
17	1	1015929-001	TRANSISTOR 2N1259	SEE NOTE 2
18	6	MS35216-16	SCREW, MACHINE, PAN HD	
19	10	1016151-004	NUT, SELF LOCKING	SEE NOTE 2
20	1	1015957-173	CONNECTOR, RECEP, ELEC	
21	1	1015957-183	CONNECTOR, RECEP, ELEC	
22	1	1015902-45	TERMINAL, LUG	
23	2	1015864-137	INSULATION, SLEEVING, ELEC	
24	3	1010490-198	INSULATION, SLEEVING, ELEC	
25	6	1015818-420	CONTACT, SOCKET	SEE NOTE 2
26	1	1902116	WIRE LIST	
27	1	1897183-001	BATTERY, STORAGE	NOTE 2
28	1	1015869-276	LEGEND PLATE (STAR, PRES	
29	1	1015869-277	LEGEND PLATE (ZERO, OPTIC	
30	1	1015869-278	LEGEND PLATE (MARK/NOT, M	
31	2	1015802-004	RELAY	SEE NOTE 2
~~32~~	~~3~~	~~RN60B1000F~~	~~(1896977-193) RESISTOR MIL-R-10509~~	

REVISIONS 17836

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
P	UPGRADED TO CLASS 'A' PER TDRR 17836	—	15-MAR-65	A.F.W.

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN ED LESNIK JR DATE 26 OCT 64
CHECKED Alan Wilson 26 OCT 64
APPROVAL Williams 27 JAN 65
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL MAR 26 1966
MIT APPROVAL MAR 26 1966

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
MONITOR PANEL
(1900055-011)

CODE IDENT NO.
SIZE B
8102046
SCALE —
SHEET 2 OF 3

MIL 10778—P

8102046 P1

IT NO	QTY	PART NUMBER	DESCRIPTION	
33	3	IN645	(1896966-004) DIODE MIL-S-19500	
34	1	1902271-011	PULSE DETECTOR 102.4KC	
35	1	1015957-184	CONNECTOR, RECP, ELEC	SEE NOTE 2
36	3	8102077	RETROFIT KIT FOR: NECP A31, PIPA SENSOR (1900372-011)	
37	3	8102078	RETROFIT KIT FOR: NECP A31, CDU ERROR (1900373-011)	
38	3	8102079	RETROFIT KIT FOR: NECP A31, SERVO ERROR (1900376-011)	
39	3	8102080	RETROFIT KIT FOR: NECP A31, IMU, CDU, ACCEL (1900374-011)	
40	1	8102081	RETROFIT KIT FOR: NECP A31, ERROR DETECT IMU DELAY (1900378-011)	
41	1	8102083	RETROFIT KIT FOR: NECP A31, POWER SUPPLY (1900492-011)	
42	4	NAS1408C4	(1896868-104) NUT, SELF LOCKING	
43	1	IN459	(1896966-291) DIODE MIL-S-19500	
44	1	1015869-22	HORIZOTAL SPLIT DISPLAY DIFFUSER	SEE NOTE 2
45	2	1016151-002	NUT, SELF LOCKING	SEE NOTE 2
46	2	MS35216-7	SCREW, MACHINE, PAN HEAD	
47	2	MS35216-40	SCREW, MACHINE, PAN HEAD	
48	1	8102097	RETROFIT KIT FOR: NECP-A31, FREQUENCY COMPARATOR (1900447-011)	

REVISIONS 17836

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
P	UPGRADED TO CLASS 'A' PER TDRR 17836	—	15-MAR-65	J.F.N.

NEXT ASSY	USED ON
8102020	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 19 JAN 65 DATE
CHECKED Fesler 19 JAN 65
APPROVAL 27 JAN 65
APPROVAL M. Watson 3-23-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
MONITOR PANEL
(1900055-011)

CODE IDENT NO.
SIZE B
8102046
SCALE —
SHEET 3 OF 3

MIL 10778-P

8102046 R

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
P	UPGRADED TO CLASS 'A' PER TDRR 17836.	—	15-MAR-65	H.F.W.
R	REVISED PER TDRR 18782		6 MAY 65	RJJ P7

REVISIONS 18836

V2-65

ITEM NO.	QTY	PART NUMBER	DESCRIPTION	
1	1	0102012	R.I.B.	
2	1	1015869-31	SWITCH	SEE NOTE 2
3	38	1015818-424	CONTACT-SOCKET, ELECTRICAL	SEE NOTE 2
4	41	1015817-424	PIN, CONTACT, ELEC	SEE NOTE 2
5	12	1015864-107	INSULATION-SLEEVING, ELEC	SEE NOTE 2
6	100	1015864-109	INSULATION-SLEEVING, ELEC	SEE NOTE 2
~~7~~	~~1~~	~~1015817-420~~	~~PIN, CONTACT, CONNECTOR~~	~~SEE NOTE 2~~
8	20	MS3192A-20A	(1896855-020) CONTACT-ELEC, PIN, CRIMP	
9	4	MS35233-2	SCREW, MACHINE, PAN HD	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102020	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Sommer DATE 16 SEP 64
CHECKED C. Piaida 17 SEP 64
APPROVAL Watkins 17 SEP 64
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL
MIT APPROVAL 26 Mar 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
MONITOR PANEL
(1900055-011)

CODE IDENT NO. 99974
SIZE B
8102046
SCALE —
SHEET 1 OF 3

MIL 10778-P

IT. NO.	QTY	PART NUMBER	DESCRIPTION	
10	1	1901304-159	NAMEPLATE	
11	1	1901646-011	VOLTAGE COMPARATOR ASSY, 3 Ø	
12	1	1901763-011	VOLTAGE COMPARATOR ASSY, DC	
13	1	RC32GF101J	(1896953-039) RESISTOR MIL-R-11/6	
14	1	RT12C2L102	(1896967-007) RESISTOR MIL-R-27208/8	
15	1	RC42GF202J	(1896951-056) RESISTOR MIL-R-11/7	
16	1	1015941-13	DIODE, ZENER 1N753A	SEE NOTE 2
17	1	1015929-001	TRANSISTOR 2N1259	SEE NOTE 2
18	6	MS35216-16	SCREW, MACHINE, PAN HD	
19	10	1016151-004	NUT, SELF LOCKING	SEE NOTE 2
20	1	1015957-173	CONNECTOR, RECEP, ELEC	
21	1	1015957-183	CONNECTOR, RECEP, ELEC	
22	1	1015902-45	TERMINAL, LUG	
23	2	1015864-137	INSULATION, SLEEVING, ELEC	
24	3	1010490-198	INSULATION, SLEEVING, ELEC	
25	6	1015818-420	CONTACT, SOCKET	SEE NOTE 2
26	1	1902116	WIRE LIST	
27	1	1897183-001	BATTERY, STORAGE	SEE NOTE 2
28	1	1015869-276	LEGEND PLATE (STAR, PRESENCE)	
29	1	1015869-277	LEGEND PLATE (ZERO, OPTICS)	
30	1	1015869-278	LEGEND PLATE (MARK/NOT, MARK)	
31	2	1015802-004	RELAY	SEE NOTE 2
~~32~~	~~3~~	~~RN60B1000F~~	~~(1896977-193) RESISTOR MIL-R-10509~~	

REVISIONS 17836

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
P	UPGRADED TO CLASS 'A' PER TDRR 17836	—	15-MAR-65	A.F.W.
R	REVISED PER TDRR 18782		6 MAY 65	RJJ PJ

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN ED LESNIK JR DATE 26 OCT 64
CHECKED Olan Wilson 26 OCT 64
APPROVAL A Williams 27 JAN 65
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
MONITOR PANEL
(1900055-011)

CODE IDENT NO. 99974
SIZE B
8102046
SCALE —
SHEET 2 OF 3

MIL 1077B--P

8102046 R

IT NO	QTY	PART NUMBER	DESCRIPTION	
33	3	1N645	(1896966-004) DIODE MIL-S-19500	
34	1	1902271-011	PULSE DETECTOR 102.4KC	
35	1	1015957-184	CONNECTOR, RECP, ELEC	SEE NOTE 2
36	3	8102077	RETROFIT KIT FOR: NECP A31, PIPA SENSOR (1900372-011)	
37	3	8102078	RETROFIT KIT FOR: NECP A31, CDU ERROR (1900373-011)	
38	3	8102079	RETROFIT KIT FOR: NECP A31, SERVO ERROR (1900376-011)	
39	3	8102080	RETROFIT KIT FOR: NECP A31, IMU, CDU, ACCEL (1900374-011)	
40	1	8102081	RETROFIT KIT FOR: NECP A31, ERROR DETECT IMU DELAY (1900378-011)	
41	1	8102082	RETROFIT KIT FOR: NECP A31, POWER SUPPLY (1900492-011)	
42	4	1016151-013	NUT, SELF LOCKING	SEE NOTE 2
43	1	1N459	(1896966-291) DIODE MIL-S-19500	
44	1	1015869-22	HORIZOTAL SPLIT DISPLAY DIFFUSER	SEE NOTE 2
45	2	1016151-002	NUT, SELF LOCKING	SEE NOTE 2
46	2	MS35216-7	SCREW, MACHINE, PAN HEAD	
47	2	MS35216-40	SCREW, MACHINE, PAN HEAD	
48	1	8102097	RETROFIT KIT FOR. NECP-A31, FREQUENCY COMPARATOR (1900447-011)	

REVISIONS 17336

	SYM	DESCRIPTION	CHG NO.	DATE	APPD.
(M)	P	UPGRADED TO CLASS 'A' PER TDRR 17836	—	15-MAR-65	A.J.N.
	R	REVISED PER TDRR 18782		6 MAY 65	RJJ P.J.

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.J. Olson DATE 19 JAN 65
CHECKED Fesler 19 JAN 65
APPROVAL H. Williams 27 JAN 65
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
MONITOR PANEL
(1900055-011)

CODE IDENT NO. 99974
SIZE B
8102046
SCALE —
SHEET 3 OF 3

MIL 10778-P

8102047 F

17836

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	UPGRADED TO CLASS A PER TDRR 17836.		10-MAR-65	K.J.N.

QTY	PART NUMBER	DESCRIPTION	
1	0102012	R.I.B	
4	1006783-29	SCREW, BUTTON HD	SEE NOTE 2
2	1015873-001	FUSE HOLDER	SEE NOTE 2
2	MS90079-5-1	(1897076-105) FUSE, F0 3	
2	MS90079-8-1	(1897076-108) FUSE, F03	
2	MS26572-1	FUSE HOLDER	
2	1015822	FILTER	SEE NOTE 2
1	1016365-001	RELAY, ARMATURE	
1	1015982-006	RELAY, ARMATURE	SEE NOTE 2
1	1901937	COVER, RELAY	
1	1901936	BRACKET, RELAY	
1	MS3127E-12-3P	(1897119-030) CONNECTOR, RECP	
4	1006783-23	SCREW, BUTTON HD	SEE NOTE 2
2	1006783-46	SCREW, BUTTON HD	SEE NOTE 2
4	1006783-22	SCREW, BUTTON HD	SEE NOTE 2
4	AN960C6	(1897006-026) WASHER, FLAT	
4	1016139-008	WASHER, SHOULDER	SEE NOTE 2
6	1016151-006	NUT, SELF LOCKING	SEE NOTE 2
2	1016151-010	NUT, SELF LOCKING	SEE NOTE 2

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPEC CONTROL DRAWING.

F	F
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LaHue 17 SEPT 64 DATE
CHECKED Fowler 21 SEP 64
APPROVAL R.T. Stone 21 SEP 64
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL MAR 25 1965
MIT APPROVAL MAR 25 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP A31
AC POWER PROTECTION
PANEL ASSEMBLY
(1900075-011)

CODE IDENT NO.	SIZE	
	B	8102047
SCALE —		SHEET 1 OF 2

MIL 10778—F

8102047 F

QTY	PART NUMBER	DESCRIPTION	
10	1015902-49	TERMINAL-LUG	SEE NOTE 2
10	1015902-3	TERMINAL-LUG	SEE NOTE 2
5	1015902-45	TERMINAL-LUG	SEE NOTE 2
3	1015902-50	TERMINAL-LUG	SEE NOTE 2
10	1015864-105	SLEEVE, INSULATION	SEE NOTE 2
4	1015864-169	SLEEVE, INSULATION	SEE NOTE 2
1	1901304-154	NAMEPLATE	
4	MS35233-2	SCREW, PAN HEAD	
1	1902157	WIRE LIST	
1	1902253	DECAL	
1	1902254	DECAL	

REVISIONS 17836 [illegible]

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	UPGRADED TO CLASS A PER TDRR		10-MAR-65	H.F.H.

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LA DUE DATE 17 SEP 64
CHECKED FESLER 21 SEP 64
APPROVAL P.G. STIER 21 SEP 64
APPROVAL J. M. Watson 3-22-65
NASA APPROVAL MAR 25 1965
MIT APPROVAL MAR 25 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP A31
AC POWER PROTECTION
PANEL ASSEMBLY
(1900075-011)

CODE IDENT NO.
SIZE B
8102047
SCALE —
SHEET 2 OF 2

MIL 10778—F

REVISIONS 17848

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E	—	UPGRADED TO CLASS 'A' PER TDRR 17848	—	10-MAR-65	

	QTY	PART NUMBER	DESCRIPTION
	1	0102016	R.I.B.
	4	AN505C4R10	SCREW, FLAT HEAD (1896881-410)
	4	MS35233-2	SCREW, MACHINE
SEE NOTE 2	4	1016151-004	NUT, SELF LOCKING
	2	F02A32V15AS	(1897099-117) FUSE, CARTRIDGE MIL-F-15160/02
	1	1902193	ELECTRONIC COMPONENTS ASSEMBLY
	1	1901304-236	NAMEPLATE
	1	1902194	WIRE LIST
	2	1902219	DECAL
	1	1902139	FOILCAL
SEE NOTE 2	2	1015817-616	CONTACT, PIN
SEE NOTE 2	2	1015818-616	CONTACT, SOCKET
	1	1015864-138	SLEEVE, CLEAR
	8	1015864-137	SLEEVE, CLEAR
	13	1015864-135	SLEEVE, CLEAR
SEE NOTE 2	1	1015902-4	TERMINAL LUG

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM, SEE SPEC CONTROL DRAWING.

NEXT ASSY	USED ON
8102062	8102002

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. TAMSEN DATE 22-OCT-64
CHECKED W. DIEHL 26-OCT-64
APPROVAL J.L. MELTON 26-OCT-64
APPROVAL 3/24/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26

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SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
BATTERY POWER PACK
(1900011-011)

CODE IDENT NO.
SIZE C
8102061
SCALE NONE
SHEET 1 of 1

8102061 E

8102062 | C |

QTY	PART NUMBER	DESCRIPTION
1	0102016	RIB
1	8102061	RETROFIT KIT FOR BATTERY POWER PACK (1900011-011)

REVISIONS 17848

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED TO CLASS 'A' PER TDRR 17848		11-MAR-65	H.F.N.

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8102002	8102002
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + – ___ DECIMALS + – ___ ANGLES + – ___
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. La Due DATE 22 OCT 64
CHECKED R. Udovich 22 OCT 64
APPROVAL L. Motter 23 OCT 64
APPROVAL Gilman 3/24/65
NASA APPROVAL 1965
MIT APPROVAL

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HOUSTON, TEXAS

RETROFIT KIT FOR: NECP A31
INERTIAL COMPONENTS
TEMPERATURE CONTROLLER
(1900342-011)

CODE IDENT NO.
SIZE B
8102062
SCALE NONE
SHEET 1 OF 1

QTY	PART NUMBER	DESCRIPTION	
1	0102019	RIB	
1	1015989-002	RESISTOR, VARIABLE	SEE NOTE 2
1	1015939-9	DIODE	SEE NOTE 2
2	1897099-117	FUSE, CARTRIDGE	
2	1016151-002	NUT, SELF LOCKING	SEE NOTE 2
2	1006783-013	SCREW, MACHINE	SEE NOTE 2
1	1901304-232	NAMEPLATE	
4	MS 35233-2	SCREW, MACHINE	
4	AN505C-4R10	(1896881-410) SCREW, FLATHEAD	
1	1902212	WIRE LIST	
4	1016151-004	NUT, SELF LOCKING	SEE NOTE 2

REVISIONS 17849

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED TO CLASS A PER TDRR 17849		22 MAR 64	JAL

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SOURCE CONTROL DRAWING.

8102002	8102002
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LaDue 22 OCT 64 DATE
CHECKED A. Udovich 22 OCT 64
APPROVAL 23 OCT 64
APPROVAL Zelman 3/24/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 6 196

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RETROFIT KIT FOR: NECP A31
AUXILIARY BATTERY PACK
(1901492-011)

CODE IDENT NO.
SIZE B
8102063
SCALE NONE
SHEET 1 OF 1

MIL 10778—P

8102072 A

QTY	PART NUMBER	DESCRIPTION
1	0102018	R.I.B.
1	1902073-011	SHELF ASSY, AGC COMPONENTS
1	1902066-011	PLATE ASSY, DSKY & ELEC COMP
1	1902070-011	PLATE ASSY, D&C COMPONENTS
1	1901850-011	PLATE & CLAMP ASSY
2	1901923	FASTENER, POS LOCK (INSEP ASSY)
4	MS35216-43	SCREW, MACH. PAN HD
1	1901304-237	NAMEPLATE
4	MS35233-2	SCREW, MACH, PAN HD

REVISIONS TDRR 16131

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 58913		22-JAN-65	A.J.F. / EF

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN H. Fride DATE 14 DEC 64
CHECKED C. Piojda 29 DEC 64
APPROVAL A. Smith 29 DEC 64
APPROVAL C. Gedeman 3/65
NASA APPROVAL 2/3/65
MIT APPROVAL 2/2/65

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HOUSTON, TEXAS

RETROFIT KIT FOR: ECP-12
TRANSPORTATION CART,
G&N ASSEMBLY
(1900009-011)

CODE IDENT NO.
SIZE B
8102072
SCALE NONE
SHEET 1 OF 1

MIL 10778—P

8102073 F

REVISIONS 17846				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	UPGRADED TO CLASS "A" PER TDRR 17846		22 MAR 65	JAC

QTY	PART NUMBER	DESCRIPTION
1	0102029	R.I.B.
1	1902404	JUNCTION BOX ASSY
1	1902399	PLATE, MTG (INSEPARABLE ASSY)
4	1902402	SPACER, STEPPED
16	1006783-45	SCREW, BUTTON HD. HEX. SOC.
16	AN960C10	(1897006-017) WASHER, FLAT

SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

F	F
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___

DO NOT SCALE THIS DRAWING

MATERIAL ———

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN
DRAWN DATE 7 JAN 65
CHECKED Ed Foster 8 JAN 65
APPROVAL L G West 8 JAN 65
APPROVAL Gelman 3/24/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL W Kupfer MAR 29 1965

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SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
OPTICS NAV BASE MOUNTING
FIXTURE

CODE IDENT NO.
SIZE B
8102073
SCALE —
SHEET 1 OF 2

MIL 10778-P

8102073 F

QTY	PART NUMBER	DESCRIPTION	
4	1006783-51	SCREW, BUTTON HD. HEX SOC	SEE NOTE 2
4	MS35338-82	WASHER, LOCK	
4	AN960C416	(1897006-042) WASHER, FLAT	
1	1010400-5	CLAMP, LOOP HINGED	SEE NOTE 2
2	1006783-26	SCREW, BUTTON HD. HEX. SOC.	SEE NOTE 2
2	MS-35338-80	WASHER, LOCK	
2	AN960C8	(1897006-028) WASHER, FLAT	
1	1901304-243	NAMEPLATE	
4	1006783-9	SCREW, BUTTON HD. HEX. SOC.	SEE NOTE 2

REVISIONS 17846

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	UPGRADED TO CLASS "A" PER TDRR 17846		23 MAR 65	JAC

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Janowiak DATE 4 MAR 65
CHECKED Fuler 5 MAR 65
APPROVAL R.C. [illegible] 5 MAR 65
APPROVAL L. Gediman 3/29/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 28 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
OPTICS NAV BASE MOUNTING
FIXTURE

CODE IDENT NO.
SIZE B
8102073
SCALE —
SHEET 2 OF 2

MIL 10778-F

8102073 G

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	UPGRADED TO CLASS "A" PER TDRR 17846		22 MAR 65	JAC
G	REVISED PER TDRR 20055	-	14 JUN 65	JHR

REVISIONS 17846

QTY	PART NUMBER	DESCRIPTION
1	0102029	R.I.B.
1	1902404	JUNCTION BOX ASSY
1	1902399	PLATE, MTG (INSEPARABLE ASSY)
4	1902402	SPACER, STEPPED
16	1006783-45	SCREW, BUTTON HD. HEX. SOC.
16	AN960C10	(1897006-017) WASHER, FLAT

SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

G	G
F	F
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. J. Fluden DATE 7 JAN 65
CHECKED Ed Foster 8 JAN 65
APPROVAL L. G. West 8 JAN 65
APPROVAL L. Geleman 3/24/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL W Kupfer MAR 26 1965

MANNED
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HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
OPTICS NAV BASE MOUNTING
FIXTURE

CODE IDENT NO.
SIZE B
8102073
SCALE —
SHEET 1 OF 2

MIL 10778-P

8102073 G

QTY	PART NUMBER	DESCRIPTION	
4	1006783-51	SCREW, BUTTON HD. HEX SOC	SEE NOTE 2
4	MS 35338-82	WASHER, LOCK	
4	AN 960C416	(1897006-042) WASHER, FLAT	
1	1010400-7	CLAMP, LOOP HINGED	SEE NOTE 2
2	1006783-26	SCREW, BUTTON HD. HEX. SOC.	SEE NOTE 2
2	MS-35338-80	WASHER, LOCK	
2	AN960C8	(1897006-028) WASHER, FLAT	
1	1901304-243	NAMEPLATE	
4	1006783-9	SCREW, BUTTON HD. HEX. SOC.	SEE NOTE 2

REVISIONS 17846

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	UPGRADED TO CLASS "A" PER TDRR 17846		23 MAR 65	JAC
G	REVISED PER TDRR 20055		14 JUN 65	JHR

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Janowiak DATE 4 MAR 65
CHECKED Fuller 5 MAR 65
APPROVAL R.C. Hettrich 5 MAR 65
APPROVAL L. Jediman 3/29/65
NASA APPROVAL R.C. [illegible] MAR 26 1965
MIT APPROVAL W. Kupfer MAR 25 1965

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HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
OPTICS NAV BASE MOUNTING
FIXTURE

CODE IDENT NO.
SIZE B
8102073
SCALE —
SHEET 2 OF 2

MIL 10778-F

8102073 H

REVISIONS 17846					
SYM	DESCRIPTION	CHG NO.	DATE	APPD.	
F	UPGRADED TO CLASS "A" PER TDRR 17846		22 MAR 65	JAC	Ⓜ
G	REVISED PER TDRR 20055	-	14 JUN 65	JHR	Ⓜ
H	REVISED PER TDRR 21262		30 JUL 65	RLP	

QTY	PART NUMBER	DESCRIPTION	
1	0102029	R.I.B.	
1	1902404-011	JUNCTION BOX ASSY	
1	1902399	PLATE, MTG (INSEPARABLE ASSY)	
4	1902402	SPACER, STEPPED	
16	1006783-45	SCREW, BUTTON HD. HEX. SOC.	SEE NOTE 2
16	AN960C10	(1897006-017) WASHER, FLAT	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN O. J. Fluder DATE 7 JAN 65
CHECKED Ed Foster 8 JAN 65
APPROVAL L G West 8 JAN 65
APPROVAL Gelman 3/24/65
MAR 26 1965
NASA APPROVAL
MAR 26 1965
MIT APPROVAL W Kupfer

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
OPTICS NAV BASE MOUNTING
FIXTURE

CODE IDENT NO.
SIZE B
8102073
SCALE —
SHEET 1 OF 2

MIL 10778—P

QTY	PART NUMBER	DESCRIPTION	
4	1006783-51	SCREW, BUTTON HD. HEX SOC	SEE NOTE 2 Ⓔ Ⓕ
4	MS35338-82	WASHER, LOCK	
4	AN960C416	(1897006-042) WASHER, FLAT	
1	1010400-7	CLAMP, LOOP HINGED	SEE NOTE 2
2	1006783-26	SCREW, BUTTON HD. HEX. SOC.	SEE NOTE 2
2	MS-35338-80	WASHER, LOCK	
2	AN960C8	(1897006-028) WASHER, FLAT	
1	1901304-243	NAMEPLATE	
4	1006783-9	SCREW, BUTTON HD. HEX. SOC.	SEE NOTE 2

REVISIONS 17846

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	UPGRADED TO CLASS "A" PER TDRR 17846		23 MAR 65	JAC
G	REVISED PER TDRR 20055		14 JUN 65	JHR
H	REVISION STATUS CHANGED		30 JUL 65	RLP

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Janowiak DATE 4 MAR 65
CHECKED Fuller 5 MAR 65
APPROVAL R.C. Hattenbach 5 MAR 65
APPROVAL L Gediman 3/29/65
NASA APPROVAL R.C. Mit MAR 26 1965
MIT APPROVAL W Kopp MAR 8 1965

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HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
OPTICS NAV BASE MOUNTING
FIXTURE

CODE IDENT NO.
SIZE B
8102073
SCALE ——
SHEET 2 OF 2

MIL 10778—F

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED TO CLASS 'A' PER TDRR 17836	–	10-MAR-65	A.F.N.

17836

QTY	PART NUMBER	DESCRIPTION	
1	0102012	R.I.B.	
2	1896981-244	RESISTOR MIL-R-18546/1(RE65G34R0)	
1	1902363	WIRE LIST "A-A"	
3	MS3192A-20A	(1896855-020)CONTACT,ELEC,PIN,CRIMP	
4	MS35216-5	SCREW, PAN HEAD	
4	1015864-109	INSULATION SLEEVING, ELEC (CLEAR)	
2	1015995-1	REACTOR 10.95 MH	SEE NOTE 2
8	1016151-004	NUT, SELF-LOCKING	
1	1016006-002	SPLICE REDUCER, CRIMP STYLE	
1	1010490-194	INSULATION SLEEVING, HEAT SHRINK	
1	1010490-198	INSULATION SLEEVING, HEAT SHRINK	SEE NOTE 2
1		NAME PLATE	
4	MS35233-2	SCREW, PAN HEAD	
1	8102095	RETROFIT KIT FOR: NECP-A31 POWER SUPPLY 115 VOLTS, 400 CPS ASSEMBLY (1900726-011)	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

8102020	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ __	+ __	+ _
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL ——

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 3-FEB-65
CHECKED 5 FEB 65
APPROVAL R W Small 5 FEB 65
APPROVAL J. M. Watson 3-23-65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
POWER SUPPLY AND LOAD PANEL
(1900702-011)

CODE IDENT NO.	SIZE	
	B	8102092
SCALE ——		SHEET 1 OF 1

MIL 10778—F

9602018

QTY	PART NUMBER	DESCRIPTION	
1	0102026	RIB	
16	MS3192A20A	(1896855-020) CONTACT, PIN	
31	MS3193A20A	(1896877-020) CONTACT, SOCKET	
20	1016113-11	CONTACT, FEMALE	SEE NOTE 2
17	1015966-001	CONTACT TERMINAL TIP	
1	1015914-001	RELAY	
2	1006783-22	SCREW, BUTTON HD HEX SOC	
2	1015860-007	SPACER (FIBER, CYLINDRICAL)	
2	1015831-257	SCREW, FLAT HD HEX SOC	
2	1015864-172	INSULATION, SLEEVING ELEC	
15	1015864-167	INSULATION, SLEEVING ELEC	
5	1015966-003	CONTACT, TERMINAL TIP	
9	1015864-135	INSULATION. SLEEVING ELEC	
3	1015902-49	TERMINAL-LUG	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING

REVISIONS 17852

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED TO CLASS A PER TDRR 17852	—	22 MAR 65	

C	C
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 19 FEB 65 DATE
CHECKED 22 FEB 65
APPROVAL E. F. Hanns 22 FEB 65
APPROVAL 3/24/65
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
GSE-PSA JUNCTION BOX
(1900268-021)

CODE IDENT NO.
SIZE B
8102096
SCALE —
SHEET 1 OF 2

MIL 10778—P

8102096 C

QTY	PART NUMBER	DESCRIPTION	
3	1010763-2	SOLDER SLEEVE	SEE NOTE 2
6	1010490-198	INSULATION, SLEEVING ELEC	SEE NOTE 2
4	MS35233-2	SCREW (NAMEPLATE)	
1	1901304-200	NAMEPLATE	
1	1902415	WIRE LIST	

REVISIONS 17852

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED TO CLASS A PER TDRR 17852	—	22 MAR 65	

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 19 FEB 65 DATE
CHECKED 22 FEB 65
APPROVAL 22 FEB 65
APPROVAL
NASA APPROVAL MAR 26 1965
MIT APPROVAL MAR 26 1965

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: NECP-A31
GSE-PSA JUNCTION BOX
(1900268-021)

CODE IDENT NO.	SIZE	
	B	8102096
SCALE —		SHEET 2 OF 2

MIL 1077B—F

H 8102110

QTY	PART NUMBER	DESCRIPTION
1		RIB
~~2~~	~~1016361-001~~	~~CLAMP, TOGGLE~~
~~6~~	~~1016065-011~~	~~PIN, SELF LOCKING~~
~~8~~	~~1016066-001~~	~~FERRULE, END~~
~~6~~	~~1016067-055~~	~~CHAIN, SAFETY~~
~~4~~	~~1016068-009~~	~~HANDLE~~
~~6~~	~~1900773~~	~~RETAINER, PIN~~
~~6~~	~~AN535-6-5~~	~~(1897109-605) SCREW, DRIVE~~
~~8~~	~~1006783-44~~	~~SCREW, BUTTON HD.~~
~~4~~	~~1010953-004~~	~~NUT, SELF-LOCKING, CLINCH-FLOATING~~
~~4~~	~~1010953-005~~	~~NUT, SELF-LOCKING, CLINCH-FLOATING.~~
~~4~~	~~MS21209-C0815~~	~~(1897053-008) INSERT, SELF LOCKING~~
6	1015826-294	SCREW, FLAT HD.
10	1015826-300	SCREW, FLAT HD.
6	1015826-308	SCREW, FLAT HD.
~~4~~	~~1006989-15~~	~~NUT, PLAIN SELF-CLINCHING~~
~~4~~	~~1006989-23~~	~~NUT, PLAIN SELF-CLINCHING~~
~~4~~	~~1006989-28~~	~~NUT, PLAIN SELF-CLINCHING~~

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 206172		20 OCT 65	R.W.T.
B	REVISED PER MXC 206436		1 NOV 65	J.H.P.
C	REVISION STATUS CHANGED		16 NOV 65	TATKER
D	REVISED PER MXC 207023		1 DEC 65	RLP
E	REVISED PER MXC 207158		6 DEC 65	RLP EF
F	REVISED PER MXC 207356		9 DEC 65	RLP
G	REVISION STATUS CHANGED		5 JAN 66	RLP
H	INITIAL RELEASE CLASS A PER TDRR 26073		11 JAN 66	SLW

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± — DO NOT SCALE THIS DRAWING	AC ELECTRONICS DIVISION GENERAL MOTORS CORP. MILWAUKEE WIS. DRAWN 16 MAR 65 DATE CHECKED C. Pijda 18 MAR 65 APPROVAL 19 MAR 65 APPROVAL 2-9-66	MANNED SPACECRAFT CENTER HOUSTON, TEXAS RETROFIT KIT FOR: TRANSPORTATION CART, G & N (1900009-021)
8102100	8102100	MATERIAL —	NASA APPROVAL A. C. METZGER	CODE IDENT NO. 99974 · SIZE B · 8102110
NEXT ASSY	USED ON			
APPLICATION		CONTRACT NAS9-497	MIT APPROVAL	SCALE — · SHEET 1 OF 4

MASTER

MIL 10778—P

H 8102110

QTY	PART NUMBER	DESCRIPTION
~~1~~	~~1016151-006~~	~~NUT, SELF-LOCKING~~
8	1016151-008	NUT, SELF-LOCKING
18	1016151-010	NUT, SELF-LOCKING
2	1006783-27	SCREW, BUTTON HD
6	1006783-28	SCREW, BUTTON HD
4	MS35308-321	SCREW, HEX HD
4	NAS1351C3-28	(1897033-046) SCREW, CAP, SOC. HD.
4	NAS1352C08-20	(1897014-032) SCREW, CAP, SOC. HD
4	MS15795-807	WASHER, FLAT
4	MS15795-808	WASHER, FLAT
4	MS15795-810	WASHER, FLAT
~~1~~	~~1015831-201~~	~~SCREW, FLAT HD~~
1	1901304-241	NAMEPLATE
~~8~~	~~1010802-001~~	~~INSERT, SELF-LOCKING, SCR THD, FLOATING~~
~~4~~	~~1015827-008~~	~~NUT, ANCHOR, SELF LOCKING.~~
1	2900622	ADAPTER SET, IMU (MATCHED)
4	2900623	BOLT, EXT. RELIEVED BODY
4	2900624	RETAINER, SPRING
1	2900900-011	PLATE ASSY, MOUNTING, G&N COMPONENTS
1	2900832	BRACKET, SHELF-R.H.
4	MS35233-2	SCREW, MACHINE, PAN HD.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	ADDED SHEET 2		20 OCT 65	R.W.T. EF
B	REVISED PER MXC 206436		1 NOV 65	J.H.P.
C	REVISION STATUS CHANGED		16 NOV 65	
D	REVISED PER MXC 207023		1 DEC 65	RLP
E	REVISED PER MXC 207158		6 DEC 65	RLP EF
F	REVISED PER MXC 207356		9 DEC 65	RLP
G	REVISED PER MXC 207788		5 JAN 66	RLP
H	INITIAL RELEASE CLASS A PER TDRR 26073		11 JAN 66	SLW

Ⓐ THIS SHEET ADDED

8102100	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R.W. Turner DATE 20 OCT 65
CHECKED Ed Foster 20 OCT 65
APPROVAL H Brinkman 20 OCT 65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
TRANSPORTATION CHART, G & N
(190009-021)

CODE IDENT NO. 99974
SIZE B
8102110
SCALE —
SHEET 2 OF 4

MIL 10778-P

H 8102110

QTY	PART NUMBER	DESCRIPTION
4	2900625	BOLT, EXT. RELIEVED BODY
4	MS15795-809	WASHER, FLAT
4	MS24585-C294	(1897067-294) SPRING. HELICAL, COMP.
~~4~~	~~MS21209F1-20~~	~~(1897059-301) INSERT, SCREW THD~~
4	MS16996-34	SCREW, CAP, SOC HD
4	MS35338-83	WASHER, LOCK, SPLIT
2	2900889	CHANNEL, MTG (INSEP ASSY)
4	1901917-003	CLAMP, RIM, CLINCHING
4	MS171434	PIN, SPRING
8	1006783-45	SCREW, BUTTON HD
~~8~~	~~MS20426AD3-5~~	~~(1897063-105) RIVET, SOLID, 100° FLAT HD~~
~~4~~	~~1015827-008~~	~~NUT, ANCHOR~~
~~4~~	~~MS16995-28~~	~~SCREW, CAP, SOC HD~~
~~4~~	~~MS16996-14~~	~~SCREW, CAP, SOC HD~~
~~4~~	~~MS16996-16~~	~~SCREW, CAP, SOC HD~~
1	2900904	RING, IMU MOUNTING (INSEP ASSY)
1	2900906	DECAL, INSTALLATION
1	2900831	BRACKET, SHELF - L.H
1	2900882	STOP, SHELF (INSEP ASSY)
1	2900885	BRACKET, STORAGE (INSEP ASSY)
1	2900886	SHELF, UPPER (INSEP ASSY)

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	ADDED SHEET 3		1 NOV 65	J.H.P.
C	REVISED PER MXC 206682		16 NOV 65	
D	REVISED PER MXC 207023		1 DEC 65	RLP
E	REVISED PER MXC 207158		6 DEC 65	RLP
F	REVISED PER MXC 207356		9 DEC 65	RLP
G	REVISION STATUS CHANGED		5 JAN 66	RLP
H	INITIAL RELEASE CLASS A PER TDRR 26073		11 JAN 66	SLW

Ⓑ **THIS SHEET ADDED**

8102100	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN J. Patterson DATE 2 Nov 65
CHECKED
APPROVAL
APPROVAL 2-9-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
TRANSPORTATION CART, G & N
(1900009-021)

CODE IDENT NO. 99974
SIZE B
8102110
SCALE —
SHEET 3 OF 4

MIL 10778-D 11-16-64

8102110 H

QTY	PART NUMBER	DESCRIPTION
4	1010953-005	NUT, SELF-LOCKING, CLINCH-FLOATING
4	MS16996-26	SCREW, CAP, SOC HD
4	AN960C416	(1897006-042) WASHER, FLAT
4	1006783-27	SCREW, BUTTON HD
4	MS35338-80	WASHER, LOCK
1	2900965	STENCIL, MARKING
1	2901079	
1	2901078	
1	2901080	
1	2901081	
1	2901082	STENCIL, MARKING

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	ADDED SHEET 4		9 DEC 65	RLP
G	REVISED PER MXC 207788		5 JAN 66	RLP
H	INITIAL RELEASE CLASS A PER TDRR 26073		11 JAN 66	SLW

Ⓕ THIS SHEET ADDED

8102100	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R. Parks DATE 9 DEC 65
CHECKED
APPROVAL 9 Dec
APPROVAL 2-9-66
NASA APPROVAL A. G. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
TRANSPORTATION CART, G&N
(1900009-021)

CODE IDENT NO. 99974
SIZE B
8102110
SCALE ——
SHEET 4 OF 4

MIL 10778-D 11-16-64

QTY	PART NUMBER	DESCRIPTION
1		RIB
1	2900673-011	CRADLE ASSY, G&N FIXTURE
1	10C4260-176	NAMEPLATE
1	MS35335-74	WASHER, LOCK
1	1006783-056	SCREW, BUTTON HD

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
M	REPLACES REV (L) WITH CHANGE PER MXC 208082		13 JAN 66	RP MEM
N	REVISED PER MXC208551		25 JAN 66	R. Ticek VAK
P	INITIAL RELEASE CLASS A PER TDRR 26769		8 FEB 66	EMS W

NEXT ASSY	USED ON
8102100	8102100

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R.W. HEISEL DATE 16 MAR 65
CHECKED C. PIOJDA 19 MAR 65
APPROVAL D. CARPENTIER 19 MAR 65
APPROVAL Mar 66
NASA APPROVAL A. C. METZGER
MIT APPROVAL W Kupfer Mar 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
G&N MOUNTING FIXTURE
(1902204-011)

CODE IDENT NO. 99974
SIZE B
8102112
SCALE —
SHEET 1 OF 1

MIL 10778-P

8102115 | F

REVISIONS 23417				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 309403		4 MAY 65	JHR
B	REVISED PER MXC 203256		24 JUL 65	R
C	REVISED PER MXC 203901		16 AUG 65	R.N.T. EF
D	REVISED PER MXC 205530		8 OCT 65	JWP EF
E	REVISED PER MXC 205706		9 OCT 65	RP
F	INITIAL RELEASE CLASS A PER TDRR 23417		19-OCT-65	JM

QTY	PART NUMBER	DESCRIPTION	
1	0102038	RIB	
1	8102119	RETROFIT KIT FOR PRECISION ALIGNMENT	
		SERVO AMP (INNER GIMBAL)	
2	8102121	RETROFIT KIT FOR PRECISION ALIGNMENT	
		SERVO AMP (OUTER OR MIDDLE GIMBAL)	
3	8102120	RETROFIT KIT FOR PHASE SENSITIVE	
		ERROR DETECTOR	
1	2900088-011	DUMP PROTECTION ASSY, GIMBAL (INNER)	
1	2900088-021	DUMP PROTECTION ASSY, GIMBAL (MIDDLE)	
1	2900088-031	DUMP PROTECTION ASSY, GIMBAL (OUTER)	
1	2900530	LEAD SET, ELECTRICAL FOR GPC RETROFIT KIT	
4	MS35216-1	SCREW, PAN HD., CROSS RECESS	
1	1004260-113	NAMEPLATE	
20	MS3192A20A	CONTACT, ELECTRICAL, PIN, CRIMP	
127	1015864-105	INSULATION, SLEEVING, ELECTRICAL	SEE NOTE 2
79	1015864-109	INSULATION, SLEEVING, ELECTRICAL	SEE NOTE 2
7	1015864-082	INSULATION, SLEEVING, ELECTRICAL	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPEC CONTROL DRAWING.

8102102	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 16 MAR 65
CHECKED C. Pojda 19 MAR 65
APPROVAL 19 MAR 65
APPROVAL J. M. Walton 10-20-65
NASA APPROVAL
MIT APPROVAL 21 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
CONTROL, GIMBAL POSITION
(1900054-011)

CODE IDENT NO. 99974
SIZE B
8102115
SCALE —
SHEET 1 OF 2

MIL 10778-P

8102115 F

QTY	PART NUMBER	DESCRIPTION
15	1010490-198	INSULATION, SLEEVING, ELEC. HEAT SHRINK
6	1010490-256	INSULATION, SLEEVING, ELEC. HEAT SHRINK
2	1010490-108	INSULATION, SLEEVING, ELEC. HEAT SHRINK
6	1016006-003	SPLICE, REDUCER

SEE NOTE 2

REVISIONS 23417

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	THIS SHEET ADDED PER MXC 203256		24 JUL 65	W.D.
C	REVISION STATUS CHANGED		16 AUG 65	R.W.T. E F
D	REVISION STATUS CHANGED		8 OCT 65	JWP E F
E	REVISED PER MXC 205706		9 OCT 65	RLP
F	INITIAL RELEASE CLASS A PER TDRR 23417.		19-OCT-65	JM

8102102	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.W. Heisel DATE 16 Mar '65
CHECKED C Piojoa 19 Mar '65
APPROVAL J. Carpentier 19 Mar '65
APPROVAL J M Watson 10-20-65
NASA APPROVAL
MIT APPROVAL 21 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
CONTROL, GIMBAL POSITION
(1900054-011)

CODE IDENT NO. 99974
SIZE B
8102115
SCALE —
SHEET 2 OF 2

MIL 1077B-D 11-16-64

8102117 G

QTY	PART NUMBER	DESCRIPTION	
2	1006927	INDICATOR, TOTAL TIME	SEE NOTE 2
1	8102125	RETROFIT KIT FOR POWER	
		SUPPLY ASSY 2V, 3200 CPS	
1	0102036	R.I.B.	
1	F02A250V½A	(1897099-007) FUSE, MIL-F-15160/02	
1	1015873-008	FUSEHOLDER	SEE NOTE 2
1	RE65G2490	(1896981-327) RESISTOR, MIL-R-18546/1	
3	1015802-004	RELAY, ARMATURE	SEE NOTE 2
~~1~~	~~1015914-001~~	~~RELAY, ARMATURE~~	~~SEE NOTE 2~~
~~1~~	~~1N649~~	~~(1896766-006) DIODE, MIL-S-19500~~	
8	1016151-006	NUT, SELF LOCKING	SEE NOTE 2
2	MS35216-5	SCREW, PAN HD	
~~2~~	~~MS35216-27~~	~~SCREW, PAN HD~~	
8	MS35216-28	SCREW, PAN HD	
8	AN960C6	(1897006-026) WASHER, FLAT	
1	2900146	PANEL, FRONT	
4	1006783-101	SCREW, BUTTON HD, HEX SOCKET	
4	MS35216-1	SCREW, PAN HD., CROSS RECESS	
~~1~~	~~1016023-001~~	~~GROMMET, RUBBER~~	
2	2900243	SPACER, BAR	
~~1~~	~~1016006-002~~	~~SPLICE REDUCER, CRIMP STYLE~~	~~SEE NOTE 2~~
3	1016006-003	SPLICE REDUCER, CRIMP STYLE	SEE NOTE 2

REVISIONS 23403

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 201255		18 MAY 65	JHR
B	REVISED PER MXC201683		28 MAY 65	WJK MGM
C	REVISED PER MXC 201927		9 JUN 65	JWP
D	REVISED PER MXC 202077		10 JUL 65	RLP EF
E	REVISED PER MXC 204195		26 AUG 65	RLP EF
F	REVISED PER MXC 205707		9 OCT 65	RLP
G	INITIAL RELEASE CLASS A PER TDRR 23403		18 OCT 65	FE FE

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

8102102	8102102
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— — DECIMALS +— — ANGLES +— —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R Vaison DATE 12 APR 65
CHECKED Ed Foster 13 APR 65
APPROVAL R W Insell
APPROVAL C Jaleman 10/12/65
NASA APPROVAL
MIT APPROVAL W Kupfer 20 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: POWER SUPPLY
AND LOAD PANEL (1902375-011)

CODE IDENT NO. 99974
SIZE B
8102117
SCALE —
SHEET 1 OF 2

MIL 10778—P

8102118 G

QTY	PART NUMBER	DESCRIPTION	
1	0102040	R.I.B.	
1	2900137-011	PHASE ANGLE DETECTOR ASSY	
1	2900138	WIRING HARNESS "A"	
1	2900139	WIRING HARNESS "B"	
~~1~~	~~2900141-011~~	~~RELAY BRACKET ASSY~~	
1	2900142-011	ALARM RELAY ASSY	
1	2900143-011	VERIFICATION RELAY ASSY	
~~1~~	~~2900014-011~~	~~LAMP DRIVER ASSY~~	
1	2900040-011	RELAY, LAMP DRIVER ASSY	
1	2900115-011	WHEEL POWER FAIL & -28VDC SENSOR ASSY	
20	1015869-12	COLORED BOOT, AMBER	SEE NOTE 2
~~2~~	~~-13~~	~~COLORED BOOT, LIGHT BLUE~~	
7	1015869-22	DIFFUSER, HORIZONTAL SPLIT	SEE NOTE 2

REVISIONS 23920

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 201684		25 MAY 65	GFK
B	REVISED PER MXC 202592		28 JUN 65	RLP W.D.
C	REVISED PER MXC 203058		22 JUL 65	FE
D	REVISION STATUS CHANGED		3 AUG 65	WJR EF
E	REVISED PER MXC 204037		19 AUG 65	JJJ AU
F	REVISION STATUS CHANGED		9 OCT 65	RLP
G	INITIAL RELEASE CLASS A PER TDRR 23920		18 OCT 65	WRB FE

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102102	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. J. Fludie DATE 19 APR 65
CHECKED C. Pigda 21 APR 65
APPROVAL V. Williams 21 APR 65
APPROVAL 14/7/65
NASA APPROVAL Al Metzger
MIT APPROVAL 11 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: BLOCK II/LEM
MONITOR PANEL (1902022-011)

CODE IDENT NO. 99974
SIZE B
8102118
SCALE ——
SHEET 1 OF 5

MIL 10778—P

8102128 E

QTY	PART NUMBER	DESCRIPTION	
1	0102046	R.I.B.	
~~2~~	~~1016299~~	~~TRANSFORMER, AUDIO FREQUENCY~~	~~SEE NOTE 2~~
5	1016166-004	JACK, TEST POINT	SEE NOTE 2
3	1016166-006	JACK, TEST POINT	SEE NOTE 2
1	MS35058-23	SWITCH, TOGGLE	
1	1897250-013	CONNECTOR, PLUG	SEE NOTE 2
1	1897247-013	CONNECTOR, RECEPTACLE	SEE NOTE 2
1	1010933-101	CLAMP, STRAIN RELIEF	SEE NOTE 2
2	MS35216-13	SCREW, MACH. PAN HEAD	
1	2900493	BRACKET, CONNECTOR MOUNTING	

REVISIONS 23393

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 203047		24 JUL 65	WJR CP
B	REVISION STATUS CHANGED		3 AUG 65	WJR EF
C	REVISED PER MXC 204031		19 AUG 65	JJJ EF
D	REVISION STATUS CHANGED		15 SEP 65	JWP
E	INITIAL RELEASE CLASS A PER TDRR 23393		18 OCT 65	JR

NOTES:-

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102100	1021201

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. B. Jones DATE 17 JUNE 65
CHECKED J. Stelma 23 JUN 65
APPROVAL D. Libowan 24 JUN 65
APPROVAL J. M. Watson 10-14-65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
REMOTE OPTICS CONTROLLER
(1902046-011)

CODE IDENT NO. 99974
SIZE B
8102128
SCALE —
SHEET 1 OF 2

MIL 10778—P

QTY	PART NUMBER	DESCRIPTION	
1	2900532	TRANSFORMER ASSEMBLY	
1	2900189	DECAL-TEST JACKS	
1	2900383	DECAL-ANTI CREEP SWITCH	
1	MS21919G-10	CLAMP-CABLE (1897073-010)	
3	1015860-004	SPACER, FIBRE	SEE NOTE 2
4	MS35216-14	SCREW, PAN HEAD	
3	MS35216-32	SCREW, PAN HEAD	
4	1016151-004	NUT, SELF-LOCKING	SEE NOTE 2
8	1010490-168	INSULATION, SLEEVING ELEC.	SEE NOTE 2
7	1010490-170	INSULATION, SLEEVING ELEC.	SEE NOTE 2
2	1010490-258	INSULATION, SLEEVING ELEC.	SEE NOTE 2
2	1016006-002	SPLICE REDUCER	SEE NOTE 2
1	2900590	LEAD SET	
1	1897303-001	RESISTOR, VARIABLE-WIREWOUND	SEE NOTE 2
1	1004260-123	NAMEPLATE	
4	MS 35233-5	SCREW-MACHINE, PAN HEAD	
4	1010617-2	NUT-HEXAGON, SELF-LOCKING	
15	1010738-6	CONTACT, SOCKET	
1	1015864-083	INSULATION, SLEEVING ELEC.	

REVISIONS 23393

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	THIS SHEET ADDED PER MXC 203047		24 JUL 65	WJR CP
B	REVISED PER MXC 203533		3 AUG 65	WJR EF
C	REVISED PER MXC 204031		19 AUG 65	JJJ EF
D	REVISED PER MXC 204874		15 SEP 65	JWP
E	INITIAL RELEASE CLASS A PER TDRR 23393		18 OCT 65	JR

Ⓐ **THIS SHEET ADDED**

—	—
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
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DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. Rendall DATE 24 JUL 65
CHECKED C. Pijda 24 JUL 65
APPROVAL D. M. 24 JUL 65
APPROVAL J. M. Watson 10-14-65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
REMOTE OPTICS CONTROLLER
(1902046-011)

CODE IDENT NO. 99974
SIZE B
8102128
SCALE —
SHEET 2 OF 2

MIL 1077B-D 11-16-64

8102130 D

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
	REVISIONS 23378			
A	REVISED PER D.O. 60758		20 JUL 65	RLP EF
B	REVISED PER MXC 204059		23 AUG 65	RLP EF
C	REVISION STATUS CHANGED		10 SEP 65	GM EF
D	INITIAL RELEASE CLASS A PER TDRR 23378		18 OCT 65	RAL TE

QTY	PART NUMBER	DESCRIPTION	
2	1015864-082	INSULATION, SLEEVING	SEE NOTE 2
1	2900598	INSULATOR, COUPLING	
1	1897283	RESISTOR, THERMAL-PROBE	SEE NOTE 2
1	2900533	ADAPTER, THERMISTOR PROBE IMU	
1	2900534	CLAMP, MOUNT, ELEC. CONN. IMU	
1	2900535	MOUNT, CONNECTOR ELECTRICAL	
1	1897317-001	CONNECTOR, PLUG-RECEP. ELEC.	
~~1~~	~~MS24057-2~~	~~COUPLING - EAR~~	
2	1000110-5	SCREW, HEX. SOC. HD.	SEE NOTE 2
3	MS15795-803	WASHER, FLAT	
3	AN935-4	WASHER-LOCK, SPRING	
1	MS16995-11	SCREW, CAP-SOC. HD.	
1	1000159-006	PACKING, PREFORMED-"O" RING	SEE NOTE 2
1	1015864-988	INSULATION, SLEEVING 15 IN. LG.	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. VENDOR ITEM: SEE SPECIFICATION CONTROL OR SOURCE CONTROL DRAWING.

NEXT ASSY	USED ON
8102100	8102100

APPLICATION

UNLESS OTHERWI FIED
DIMENSIONS ARE S
TOLERANCES
FRACTIONS DECIMAL LES
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DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30-Jun-65
CHECKED 6 Jul 65
APPROVAL 6 Jul 65
APPROVAL 9-30-65
NASA APPROVAL C. C.
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
HOSE SET, GSE COOLANT
INTERCONNECT, G & N TESTING
(1901876-011)

CODE IDENT NO.	SIZE	
99974	B	8102130

SCALE —
SHEET 1 OF 2

MIL 10778--P

8102130 D

QTY	PART NUMBER	DESCRIPTION	
1	AN6270-4-48	HOSE ASSEMBLY	
1	1016238-003	COUPLING HALF, QUICK DISC. MALE	SEE NOTE 2
1	1016019-004	COUPLING HALF, QUICK DISC. FEMALE	SEE NOTE 2
2	2900401-001	TUBING, IDENTIFICATION	
2	-002		
2	-005		
2	-006		
2	-007		
2	2900401-008	TUBING, IDENTIFICATION	
1	1000159-11	PACKING, PREFORMED-"O" RING	SEE NOTE 2
1	0102049	R.I.B	

REVISIONS 23378

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	THIS SHEET ADDED PER D.O.60758		20 JUL 65	RLP EF
B	REVISED PER MXC 204059		23 AUG 65	RLP EF
C	REVISED PER MXC 204713		10-SEP 65	GM EF
D	INITIAL RELEASE CLASS A PER TDRR 23378		18 OCT 65	eH

Ⓐ THIS SHEET ADDED

8102100	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Parks DATE 20 JUL 65
CHECKED Ed Foster 23 JUL 65
APPROVAL P. O'Malley 23 JUL 65
APPROVAL 9-30-65
NASA APPROVAL
MIT APPROVAL 20 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
HOSE SET, GSE COOLANT
INTERCONNECT, G&N TESTING
(1901876-011)

CODE IDENT NO. 99974
SIZE B
8102130
SCALE —
SHEET 2 OF 2

MIL 10778-D 11-16-64

8102131 E

QTY	PART NUMBER	DESCRIPTION
1	2900446	FRAME, DUMMY NAV. BASE
3	1900963	BALL, PRECISION
3	MS21250-04028	BOLT, EXTERNAL WRENCHING
3	2899977-001	WASHER, FLAT, LUBRICATED
6	2899979	WASHER, SPRING TENSION
3	2899991	WASHER, SHOULDERED & RECESSED
3	2899984-001	COLLAR, CENTERING
4	MS20005-14	BOLT, INTERNAL WRENCHING
4	AN960-516L	(1897006-051) WASHER, FLAT
1	1004260-136	NAMEPLATE
2	MS16998-65	SCREW, CAP, SOCKET HD
4	1015837-001	RELAY SEE NOTE 2
1	MS3127E20-41S	(1897052-410) CONNECTOR, ELEC.

REVISIONS 23406

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 203266		24 JUL 65	R RWH
B	REVISION STATUS CHANGED		2 SEP 65	PHG.
C	REVISED PER MXC 204952		17 SEP 65	PHG EF
D	REVISION STATUS CHANGED		30 SEP 65	JWP
E	INITIAL RELEASE CLASS A PER TDRR 23406		18 OCT 65	JR

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPEC CONTROL DRAWING.

8102100	1020201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − | DECIMALS + — − | ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN John A. Kondowski DATE 30-Jun-65
CHECKED 6 Jul 65
APPROVAL R.H. 6 Jul 65
APPROVAL Jedinan 10/13/65
NASA APPROVAL
MIT APPROVAL 20 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
OPTICS/NAV BASE
MOUNTING FIXTURE
(1902301-011)

CODE IDENT NO. 99974
SIZE B
8102131
SCALE —
SHEET 1 OF 2

MIL 10778-P

8102131 E

QTY	PART NUMBER	DESCRIPTION	
1	2900734	BRACKET, RELAY (INSEP)	
4	1006783-23	SCREW, BUTTON HD	SEE NOTE 2
4	AN960C6	(1897006-026) WASH. FLAT	
4	MS21045C06	(1897082-106) NUT, SELF LKG	
5	1006921-001	TERMINAL, STAND-OFF	
5	MS16995-9	SCREW, CAP, SOCKET HD	
5	AN960-C4	(1897006-024) WASHER, FLAT	
8	MS16995-17	SCREW, CAP, SOCKET HD	
2	1896966-004	DIODE (IN645)	
16	MS3192A20A	(1896855-020) CONT, MALE	
13	MS3193A20A	(1896877-020) CONT, FEMALE	
52	1015864-167	INSULATION, SLEEVE	SEE NOTE 2
2	1016128-001	BAND, IDENTIFICATION	
2	1016006-002	SPLICE REDUCER	
2	1010490-258	INSULATION, SLEEVE	SEE NOTE 2
1	2900747	LEAD SET	
1	1015902-49	TERMINAL-LUG, CRIMP STYLE	SEE NOTE 2
1	0102048	R.I.B.	

REVISIONS 23406

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	THIS SHEET ADDED PER MXC 204370		2 SEP 65	PHG
C	REVISED PER MXC 204952		17 SEP 65	PHG EF
D	REVISED PER MXC 205367		30 SEP 65	JWP
E	INITIAL RELEASE CLASS A PER TDRR 23406		18 OCT 65	JR

(B1) **THIS SHEET ADDED**

8102100	1020201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+ —	+ —
− —	− —	− —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

		DATE
DRAWN	J.A. KOSIDOWSKI	30 JUN 65
CHECKED	W. FRIEDE	6 JUL 65
APPROVAL	R.H. STUEBING	6 JUL 65
APPROVAL	Gedeman	10/13/65
NASA APPROVAL		
MIT APPROVAL		20 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
OPTICS/NAV BASE MOUNTING
FIXTURE (1902301-011)

CODE IDENT NO.	SIZE	
99974	B	8102131
SCALE —		SHEET 2 OF 2

MIL 10778-P

REVISIONS				23378
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 204060		23 AUG 65	RLP EF
B	REVISION STATUS CHANGED		9 SEP 65	RJJ CW
C	INITIAL RELEASE CLASS A PER TDRR 23378		18 OCT 65	RH 78

QTY	PART NUMBER	DESCRIPTION	
2	1015864-082	INSULATION, SLEEVING	SEE NOTE 2
1	2900598	INSULATOR, COUPLING	
1	1897283	RESISTOR, THERMAL-PROBE	SEE NOTE 2
1	2900533	ADAPTER, THERMISTER PROBE-IMU	
1	2900534	CLAMP, MOUNT, ELEC. CONN. IMU	
1	2900535	MOUNT, CONNECTOR, ELEC.	
1	1897317-001	CONNECTOR, PLUG-RECEP. ELEC.	
~~1~~	~~MS24057-2~~	~~COUPLING-EAR~~	
2	1000110-5	SCREW, HEX. SOC. HD.	SEE NOTE 2
3	MS15795-803	WASHER, FLAT	
3	AN935-4	WASHER-LOCK, SPRING	
1	MS16995-11	SCREW, CAP-SOC. HD.	
2	AN6270-4-480	(1897145-042) HOSE ASSEMBLY	
3	1016238-003	COUPLING HALF, QUICK DISC. MALE	SEE NOTE 2
3	1016019-004	COUPLING HALF, QUICK DISC. FEMALE	SEE NOTE 2
1	AN6270-4-48	HOSE ASSEMBLY	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. VENDOR ITEM: SEE SPECIFICATION CONTROL OR SOURCE CONTROL DRAWING

8102100	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Pocha DATE 20 JUL 65
CHECKED Ed Foster 23 JUL 65
APPROVAL P. O'Malley 23 JUL 65
APPROVAL 9-30-65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
HOSE SET, GSE COOLANT
INTERCONNECT, ISS/OSS TESTING
(1901875-011)

CODE IDENT NO. 99974
SIZE B
8102132
SCALE ——
SHEET 1 OF 2

MIL 10778-D 11-16-64

8102132 C

QTY	PART NUMBER	DESCRIPTION	
2	2900401-001	TUBING, IDENTIFICATION	
2	-002		
2	-005		
2	-006		
2	-007		
2	2900401-008	TUBING, IDENTIFICATION	
1	1000159-006	PACKING, PREFORMED-"O" RING	SEE NOTE 2
1	1015864-988	INSULATION, SLEEVING 15 IN. LG.	SEE NOTE 2
1	1000159-011	PACKING, PREFORMED-"O" RING	SEE NOTE 2
1	0102049	R.I.B.	

REVISIONS 23378

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 204060		23 AUG 65	RLP EF
B	REVISED PER MXC 204714		9 SEP 65	RJJ CW
C	INITIAL RELEASE CLASS A PER TDRR 23378		18 OCT 65	

8102100	8102100
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Parker DATE 20 JUL 65
CHECKED Ed Foster 23 JUL 65
APPROVAL P. O'Malley 23 JUL 65
APPROVAL 9-30-65
NASA APPROVAL
MIT APPROVAL 10 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
HOSE SET, GSE COOLANT
INTERCONNECT, ISS/OSS TESTING
(1901875-011)

CODE IDENT NO. 99974
SIZE B
8102132
SCALE —
SHEET 2 OF 2

MIL 10778-D 11-16-64

NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	8102134	RETROFIT KIT FOR PURGE AND FILL FIXTURE (1902371-011)
1	8102135	RETROFIT KIT FOR GEN MOUNTING FIXTURE (1902204-011)
1	8102136	RETROFIT KIT FOR NECPA31 MARRIAGE REMOTE OPTICS CONTROLLER (1902046-011)
1	8102140	RETROFIT KIT FOR OPTICS/NAV BASE MOUNTING FIXTURE (1902301-011)
1	8102143	RETROFIT KIT FOR OPTICS INERTIAL TEST SET (1902300-011) SERIES 100 MARRIAGE CHANGES
1	8102152	RETROFIT KIT FOR MARRIAGE GSE/PSA JUNCTION BOX (1902195-011)

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REVISIONS 23414

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ E	INITIAL RELEASE CLASS A PER TDRR 23414		18 OCT 65	

NEXT ASSY	USED ON
8102002	8102002

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + ___ − DECIMALS + ___ − ANGLES + ___ −
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 3 Aug 65
CHECKED DATE 12 AUG 65
APPROVAL R.C. 4 Aug 65
APPROVAL C A Olson 21 Oct 65
NASA APPROVAL
MIT APPROVAL 21 Oct

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
MASTER RETROFIT KIT NECP-A31
SERIES 100 MARRIAGE CHANGES

CODE IDENT NO. 99974
SIZE B
8102133
SCALE —
SHEET 1 OF 1

MIL 1077B D 11-16-64

NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1		R.I.B.
2	1010400-5	CLAMP - LOOP, HINGED
1	1010400-7	CLAMP - LOOP, HINGED
1	1010400-8	CLAMP - LOOP, HINGED
3	1010400-9	CLAMP - LOOP, HINGED
1	1010400-11	CLAMP - LOOP, HINGED
1	1902426	BRACKET, ELECTRICAL CONNECTOR
2	1006783-20	SCREW, BUTTON HEAD
2	AN960C4	(1897006-024) WASHER, FLAT

REVISIONS 23414

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A	INITIAL RELEASE CLASS A PER TDRR 23414		18 OCT 65	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102133	8102133
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 3 AUG 65
CHECKED 12 AUG 65
APPROVAL 4 Aug 65
APPROVAL E A Olson 21 Oct 65
NASA APPROVAL
MIT APPROVAL 21 Oct 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
NECP-A31 MARRIAGE
G&N MOUNTING FIXTURE
(1902204-011)

CODE IDENT NO. 99974
SIZE B
8102135
SCALE —
SHEET 1 OF 1

MIL 10778-D 11-16-64

8102145 | B

QTY	PART NUMBER	DESCRIPTION
1	0102066	R.I.B
3	1006498-008	INDICATOR, MECHANICAL SHOCK
1	1004260-160	NAMEPLATE
4	MS35216-2	SCREW, MACHINE, PAN HD.
2	2900911	PIN, STRAIGHT, THREADED
1	2900909	BRACKET, MOUNTING, INDICATORS
4	MS35216-45	SCREW, MACHINE, PAN HD.
4	1016151-008	NUT, SELF-LOCKING
6	MS16995-11	SCREW, CAP, SOC. HD., HEX.
6	1016151-004	NUT, SELF-LOCKING
3	MS16995-10	SCREW, CAP, SOC. HD., HEX.
1	1902543	STENCIL, MARKING
1	1902544	STENCIL, MARKING

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 206908		17 NOV 65	RLP
B	UPGRADED TO CLASS A PER TDRR 25337		19 NOV 65	J J J

NOTE:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102145	1021201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS
DRAWN R. LaDue DATE 8 SEP 65
CHECKED Ed Foster 14 SEP 65
APPROVAL A. Smith 15 SEP 65
APPROVAL 12-13-65
NASA APPROVAL R. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT –
FIXTURE, HANDLING AND INSTALLATION, GUIDANCE AND NAVIGATION HARNESS (1901846-021), ECP 75

CODE IDENT NO. 99974
SIZE B
8102145
SCALE —
SHEET 1 OF 1

MIL 10778-P

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 62133		6-21-66	E.L.
B	ADDED PART NO'S 8102258, 8102255 AND ASSOC. INFO.	D.O. 62259	30 Aug 1966	
C	REVISED PER MXC 215615		13 OCT -66	D.G
D	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	

QTY	PART NUMBER	DESCRIPTION
1	8102250	RETROFIT KIT PORTABLE TEMP.
		CONT.(2900060-011) MARRIAGE
		KIT 3
1	8102246	RETROFIT KIT LIFTING TEMP.
		CONT.(2900063-011) MARRIAGE
		KIT 3
1	8102247	RETROFIT KIT OPTICS INERTIAL
		TEST SET (2900022-031)
		MARRIAGE KIT 3
1	8102248	RETROFIT KIT INTERCONNECT
		CABLE SET-SERIES 100 SPECIAL
		(2900713-031) MARRIAGE KIT 3
1	8102249	RETROFIT KIT INTERCONNECT
		CABLE SET-SPECIAL LEM
		(6900043-031) MARRIAGE KIT 3
1	8102258	RETROFIT KIT-INTERCONNECT
		CABLE SET-SPECIAL BLK II
		(2900712-031) MARRIAGE KIT 3

1	8102255	RETROFIT KIT- PSA TEST
		POINT ADAPTER (2900037-021)
		MARRIAGE KIT 3
1	8102266	RETROFIT KIT-SCM/
		PSAAM TEST AND CAL
		CONSOLE (2900895-011)

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1021201	1021201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R.W. Beisel DATE 3 DEC 65
CHECKED J.G. Gymoure 3 DEC 65
APPROVAL J. McComas 21 June 66
APPROVAL M. Watson 10-14-66
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT —
MARRIAGE KIT 3

CODE IDENT NO. 99974
SIZE B
8102158
SCALE —
SHEET 1 OF 1

MIL 10778—P

E 8102158

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 62133		6-21 66	E.L.
B	ADDED PART NO'S 8102258, 8102255 AND ASSOC. INFO.	D.O. 62259	[illegible]	[illegible]
C	REVISED PER MXC 215615		13 OCT 66	D.G.
D	INITIAL RELEASE CLASS A PER TDRR [illegible]		11/28/66	10-13-66
E	REVISED PER TDRR 33236		3 APR 67	JC DW

QTY	PART NUMBER	DESCRIPTION
1	8102250	RETROFIT KIT PORTABLE TEMP.
		CONT (2900060-011) MARRIAGE
		KIT 3
1	8102246	RETROFIT KIT LIFTING TEMP.
		CONT. (2900063-011) MARRIAGE
		KIT 3
1	8102247	RETROFIT KIT OPTICS INERTIAL
		TEST SET (2900022-031)
		MARRIAGE KIT 3
1	8102248	RETROFIT KIT INTERCONNECT
		CABLE SET-SERIES 100 SPECIAL
		(2900713-031) MARRIAGE KIT 3
1	8102249	RETROFIT KIT INTERCONNECT
		CABLE SET-SPECIAL LEM
		(6900043-031) MARRIAGE KIT 3
1	8102258	RETROFIT KIT-INTERCONNECT
		CABLE SET-SPECIAL BLK II
—		(2900712-031) MARRIAGE KIT 3
1	8102255	RETROFIT KIT- PSA TEST
		POINT ADAPTER (2900037-021)
		MARRIAGE KIT 3
1	8102266	RETROFIT KIT-SCM/
		PSAAM TEST AND CAL
		CONSOLE (2900895-011)

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1021201	1021201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN RW [illegible] DATE 3 DEC 65
CHECKED [illegible] 3 DEC 65
APPROVAL [illegible] 21 [illegible]
APPROVAL M Walton 10-14-66
NASA APPROVAL
ECB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT —
MARRIAGE KIT 3

CODE IDENT NO. 99974
SIZE B
8102158
SCALE —
SHEET 1 OF 2

MIL 10778 F

REVISIONS				
SYM	DESCRIPTION	CHG NO	DATE	APPD
E	REVISED PER TDRR 33236		3 APR 67	JC

QTY	PART NUMBER	DESCRIPTION
1	8102336	RETROFIT KIT COVER SET,
		ELECTRICAL CONNECTOR (P/N
		2900065-011 OR 6900001-011)
		MARRIAGE KIT 3
1	8102272	RETROFIT KIT-ADAPTER CABLE SET,
		BLOCK I-SERIES 100
		(P/N 1902545-011)
1	8102273	RETROFIT KIT-ADAPTER CABLE SET,
		BLOCK II (P/N 2901076-011)
1	8102274	RETROFIT KIT-BREAKOUT BOX
		AND ADAPTER CABLE SET, BASIC
		(P/N 2901075-011)
1	8102276	RETROFIT KIT-ADAPTER CABLE
		SET, LEM (P/N 6900077-011)

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS.
DRAWN R.W. HEISEL DATE 3 DEC 65
CHECKED J.A.CYZMOURE 3 DEC 65
APPROVAL J. McCOMAS 21 JUNE 66
J. M. WATSON 10-14-66
CONTRACT NAS 9-497
NASA APPROVAL W.S.S.J.
ECB
MIT APPROVAL V.W.A T

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
MARRIAGE KIT 3

SIZE B
CODE IDENT NO. 99974
8102158
SCALE ___
SHEET 2 OF 2

8102166 | E |

QTY	PART NUMBER	DESCRIPTION
1	0102074	RIB
1	2901122	LEAD SET
12	1897266-001	CONTACT, RECPT. ELECT.
7	1016369-420	CONTACT, MALE
6	MS3193A-20A	(1896877-020) CONTACT, ELECT. SOC.
3	1016006-003	SPLICE REDUCER
3	1010490-198	INSULATION, SLEEVING, ELECT.
2	1010490-228	INSULATION, SLEEVING, ELECT.
1	MS3192A-20A	(1896855-020) CONTACT, ELECT. PIN
1	1016281-181	CONTACT, SOCKET
1	1016281-180	CONTACT, PIN
1	1015902-3	TERMINAL LUG
2	1897266-004	CONTACT, RECPT. ELECT.
1	1010763-002	SOLDER SLEEVE

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 208274		17 JAN 66	RLP JJK
B	REVISED PER MXC 208408		25 JAN 66	RLP
C	REVISED PER MXC 208506		27 JAN 66	RLP
D	REVISED PER MXC 208754		28 JAN 66	OKD
E	INITIAL RELEASE CLASS A PER TDRR 26070		28 JAN 66	RLP

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

NEXT ASSY	USED ON
8102162	8102159

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Fride DATE 14 DEC 65
CHECKED J. G. Eynmoure 16 DEC 65
APPROVAL R. D. Stin 12/16/65
APPROVAL J. M. Watson 2-9-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: CABINET ASSY, ELEC EQUIPMENT OPTICS,-INERTIAL ANALYZER ASSY. P/N 2900032-011

CODE IDENT NO. 99974 SIZE B 8102166
SCALE ___ SHEET 1 of 1

MIL 10779-P

QTY	PART NUMBER	DESCRIPTION
1	0102078	RIB
2	MS3193A-20A	(1896855-020) CONTACT, PIN
1	1902583	LEAD SET

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 208371		25 JAN 66	RLP
B	REVISED PER MXC 208718		28 JAN 66	DKD
C	INITIAL RELEASE CLASS A PER TDRR 26070		28 JAN 66	RLP

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102168	8102159
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Freidl DATE 14 DEC 65
CHECKED J. G. Seymoure 16 DEC 65
APPROVAL 12/16/65
APPROVAL J M Watson 2-1-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: CABLE ASSY, SPECIAL PURPOSE, ELEC, W96 P/N 1902347

CODE IDENT NO. 99974
SIZE B
8102167
SCALE —
SHEET 1 OF 1

MIL 10778—F

QTY	PART NUMBER	DESCRIPTION
1	0102071	RIB
1	2901109	LEAD SET
1	2901027	DECALCOMMANIA
1	2901028	DECALCOMMANIA
1	2901029	DECALCOMMANIA
2	1015873-008	FUSEHOLDER, INDICATING
1	F02A250V5AS	(1897099-114) FUSE
2	F02A250V1AS	(1897099-109) FUSE
1	F02A250V4AS	(1897099-113) FUSE
1	1016376-24	CONNECTOR, ELECT.
2	1016006-002	SPLICE REDUCER
2	1016006-003	SPLICE REDUCER
6	MS3192A-20A	(1896855-020) CONTACT PIN
13	MS3193A-20A	(1896877-020) CONTACT SOCKET
13	1897266-001	CONTACT, RECEPTACLE
7	1897190-1	CONTACT, ELECT. PIN
6	1016369-421	CONTACT, FEMALE
4	-188	CONTACT, INNER MALE
4	-488	CONTACT, OUTER MALE
4	1016369-588	HYRING

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 208299		17 JAN 66	RLP JAC
B	REVISED PER MXC 208341		25 JAN 66	RLP
C	REVISED PER MXC 208556		27 JAN 66	RLP
D	INITIAL RELEASE CLASS A PER TDRR 26070		28 JAN 66	J.H.P.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

8102160	8102159
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 14 DEC 65
CHECKED 16 DEC 65
APPROVAL 12/16/65
APPROVAL J. M. Watson 2-4-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 9 Feb 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
DISTRIBUTION BOX ASSY
P/L 2900024-011

CODE IDENT NO. 99974
SIZE B
8102171
SCALE ——
SHEET 1 OF 2

MIL 10778—P

QTY	PART NUMBER	DESCRIPTION
4	1016369-711	INNER SLEEVE
4	1016369-713	OUTER SLEEVE
4	1016369-721	CONTACT FEMALE
1	1015902-3	TERMINAL LUG
1	↓ -8	↓
2	-46	
2	1015902-49	TERMINAL LUG
4	1010763-2	SOLDER SLEEVE
5	1010490-226	INS SLEEVING, ELECT HT SHRINK
1	↓ -228	↓
3	-232	
7	-256	
2	1010490-258	INS SLEEVING, ELECT HT SHRINK
6	1015864-227	INSULATION SLEEVING, ELECT
~~2~~	~~MS35216-25~~	~~SCREW, PAN HEAD~~
~~2~~	~~MS35333-71~~	~~WASHER-LOCK~~
1	1004260-171	NAMEPLATE
2	1010763-3	SLEEVE, SOLDER

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 208299		17 JAN 66	RLP JAC
B	REVISION STATUS CHANGED		25 JAN 66	RLP
C	REVISION STATUS CHANGED		27 JAN 66	RLP
D	INITIAL RELEASE CLASS A PER TDRR 26070		28 JAN 66	JHP

NEXT ASSY	USED ON
8102160	8102159

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN FRIEDE DATE 14 DEC 65
CHECKED J. CYZMOURE 16 DEC 65
APPROVAL P.G. STIER 16 DEC 65
APPROVAL 2-9-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
DISTRIBUTION BOX ASSY
P/L 2900024-011

CODE IDENT NO. 99974
SIZE B
8102171
SCALE —
SHEET 2 OF 2

MIL 1077B P

QTY	PART NUMBER	DESCRIPTION	
1	0102082	RIB	
1	1016006-003	SPLICE REDUCER	SEE NOTE 2
1	1016006-004	SPLICE REDUCER	
1	1010490-256	SPLICE REDUCER	
1	1010490-312	SPLICE REDUCER	SEE NOTE 2
1	6900098	LEAD SET	
4	1897348-002	CONTACT, SOCKET	

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER MXC 208361		24 JAN 66	OKD MEM
B	REVISED PER MXC 208685		27 JAN 66	RLP
C	INITIAL RELEASE CLASS A PER TDRR 26070		28 JAN 66	RLP

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

8102179	8102159
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN C. J. Kostek DATE 7 JAN 66
CHECKED W. Diehl 10 Jan 66
APPROVAL D. Carpenter 11 Jan 66
APPROVAL J. M. Watson 2-1-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL

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SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-CABLE ASSEMBLY
W137 (6900005)
LORS/MARRIAGE

CODE IDENT NO. 99974
SIZE B
8102180
SCALE —
SHEET 1 OF 1

MIL 10778-P

8102187 A

QTY	PART NUMBER	DESCRIPTION
1	0102085	R.I.B.
2	1902599	PIN, STRAIGHT, THREADED
1	1902601	CUSHION, END CONNECTOR
4	MS35233-2	SCREW, MACHINE, PAN HEAD

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 27661		15 MAR 66	WK DWG

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1021201	1021201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Frank R. Walter DATE 28 JAN 66
CHECKED J. Slader 2 FEB 66
APPROVAL E. Goldman 3/29/66
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Kunli 30 Mar 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT — FIXTURE, HANDLING AND INSTALLATION, GUIDANCE AND ~~NAVIGATION~~ HARNESS (1901846-031)
ECP 270

SIZE B
CODE IDENT NO. 99974
8102187
SCALE ___
SHEET 1 OF 1

MIL 10778-P

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

	QTY	PART NO.	DESCRIPTION
	1	0102088	R.I.B.
	1	1004260-146	NAMEPLATE
	4	MS35233-2	SCREW, MACHINE, PAN HEAD
	2	1902605	SPACER, TOGGLE CLAMP
	4	1902606	SPACER, TOGGLE CLAMP
	1	1902607	RETAINER, ELEC. COMP. (INSEP. ASSY)
	4	1902608	BAR, TOGGLE CLAMP (INSEP. ASSY)
	1	1902609	PAD, CDU FRAME ASSY
SEE NOTE 2	3	1017423-1	NUT, THUMB, KNURLED
	5	MS171434	PIN-SPRING
SEE NOTE 2	1	1016151-013	NUT, SELF-LOCKING
SEE NOTE 2	24	1006783-101	SCREW, BUTTON HD HEX SOC
	2	MS35201-71	SCREW, FLAT HD
	1	1901916-007	POST, ELEC. MECH EQUIPMENT
	1	1901916-008	POST, ELEC. MECH EQUIPMENT
	2	2901526	BRACKET, EYEPIECE STOWAGE UNIT
	6	MS20365-1032A	(1897069-001) NUT, SELF-LOCKING
SEE NOTE 2	6	1006783-45	SCREW-BUTTON HD
	2	1901917-002	CLAMP, RIM CLENCHING
	6	AN960C10L	(1897006-019) WASHER, FLAT
	1	2901536	STENCIL

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	B	① REPLACES REV. 'A' WITH CHANGE PER MXC 212307	—	13-MAY-66	
	C	REVISED PER MXC 212599		25 MAY 66	JAC
	D	REVISED PER MXC 212905		1 JUN 66	JIM P
	E	INITIAL RELEASE CLASS A PER TDRR 31330		9/29/66	GA

1021201	1021201
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL —

APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN BOB KARLING DATE 8-FEB 66
CHECKED J. GRIEB 14-FEB 66
APPROVAL
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
TRANSPORTATION CART, G & N
(1900009-031) ECP 267

SIZE C | CODE IDENT NO. 99974 | 8102195

SCALE — | SHEET 1 OF 1

MIL-1068D D

8102202

QTY	PART NUMBER	DESCRIPTION
1	0102090	R.I.B.
1	8102203	RETROFIT KIT- 400~POWER
		SUPPLY (1902389-011)
1	1004269-190	NAMEPLATE
2	RC20GF510J	(1896952-018) RESISTOR 51Ω
		½ W MIL-R-11/3
1	2901239	LEAD SET
1	MS3192A-20A	(1896855-020) PIN, CONTACT
1	1016006-003	SPLICE REDUCER
1	1010490-256	SLEEVING, ELEC., HEAT SHRINK
4	1010490-198	SLEEVING, ELEC., HEAT SHRINK
4	1015864-167	SLEEVING, ELEC., CLEAR
5	1015864-109	SLEEVING, ELEC., CLEAR

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 61669		18 FEB 66	R.K.
B	REVISED PER MXC 210298		29 MAR 66	JW P7
C	REVISED PER MXC 211005			JJJ P7
D	INITIAL RELEASE CLASS A PER TDRR 28575		2 MAY 66	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
8102198	8102157

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Bob Harling DATE 11 FEB 66
CHECKED 17 FEB 66
APPROVAL 5-3-66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 5-9-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT- POWER
SUPPLY AND LOAD PANEL
(2900033-011)
MARRIAGE KIT 2

SIZE B CODE IDENT NO. 99974 8102202

SCALE ___ SHEET 1 OF 1

8102205 | H

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	REPLACES REV(B) WITH CHANGE PER MXC 211549		22 APR 66	RLP Jas
D	REVISION STATUS CHANGED		28 APR 66	JJJ RWH
E	REVISION STATUS CHANGED		3 MAY 66	JRS
F	REVISED PER MXC 212126		5 MAY 66	RLP
G	REVISED PER MXC 212435		19 MAY 66	CP
H	INITIAL RELEASE CLASS A PER TDRF 30013		26 MAY 66	

QTY	PART NUMBER	DESCRIPTION	
1	0102092	R.I.B.	
1	1016024-001	RELAY, ARMATURE	SEE NOTE 2
1	1015982-006	RELAY, ARMATURE	
1	1897277-001	RECTIFIER, BRIDGE	
1	1897261	COMPARATOR	
1	1897337-101	LIGHT INDICATOR ASSY	
1	1015982-007	RELAY, ARMATURE	
1	1897422-004	CONNECTOR, ELECTRICAL	
9	1897370-001	PLUG, END SEAL	
1	1016282-16	GROMMET, CONNECTOR	SEE NOTE 2
~~3~~	~~F02B125V2AS~~	~~(1897099-129) FUSE MIL-F-15160/02~~	
2	F02B32V15AS	(1897099-133) FUSE-MIL-F-15160/02	
4	1016006-002	SPLICE REDUCER	SEE NOTE 2
2	1016006-003	SPLICE REDUCER	
4	1010490-258	INSULATION SLEEVING, ELEC	
2	1010490-256	INSULATION SLEEVING, ELEC	
1	1015818-616	CONTACT, SOCKET	
27	1015864-135	INSULATION SLEEVING, ELEC	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

8102204	1900011-031
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN W. MUNSON DATE 16 FEB 66
CHECKED W. DIEHL 18 FEB 66
APPROVAL B. SCHLAEFER 18 FEB 66
APPROVAL J. M. Watson 5-27-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL McMurdy 7-8-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
BATTERY POWER PACK
(1900011-031)

CODE IDENT NO. 99974
SIZE B
8102205
SCALE ——
SHEET 1 OF 4

MIL 10778-D 11-16-64

8102205 H

QTY	PART NUMBER	DESCRIPTION	
25	1015864-137	INSULATION SLEEVING, ELEC	SEE NOTE 2
11	1015864-139	INSULATION SLEEVING, ELEC	|
9	1015864-138	INSULATION SLEEVING, ELEC	|
2	1016281-161	CONTACT, SOCKET	SEE NOTE 2
2	1006733-45	SCREW, BUTTON HEAD	
4	1015860-001	SPACER	SEE NOTE 2
10	1012525-004	NUT	
4	1006783-24	SCREW, BUTTON HEAD	SEE NOTE 2
4	AN960C6L	(1897006-036) WASHER, FLAT	
4	MS 35338-79	WASHER, LOCK	
6	1006783-22	SCREW, BUTTON HEAD	SEE NOTE 2
32	1006783-19	SCREW, BUTTON HEAD	SEE NOTE 2
4	MS 35338-78	WASHER, LOCK	
2	1010676-1	TERMINAL, STUD (INSULATED)	SEE NOTE 2
2	1010618-13	SCREW, BUTTON HD. SLF-LKG	SEE NOTE 2
7	1016151-010	NUT, SELF-LOCKING	SEE NOTE 2
1	2901441	BRACKET (INSEP.)	
1	2901438	COMPONENT BOARD ASSY	
1	1902626	DECAL, FUNCTIONAL AREA	
1	1016006-001	SPLICE REDUCER	SEE NOTE 2
1	1010490-200	INSULATION SLEEVING, ELEC	SEE NOTE 2

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	THIS SHEET ADDED		22 APR 66	RLP Jew
D	REVISION STATUS CHANGED		28 APR 66	JJJ RWH
E	REVISION STATUS CHANGED		3 MAY 66	JRS
F	REVISED PER MXC 212126		5 MAY 66	RLP
G	REVISED PER MXC 212435		19 MAY 66	CP
H	INITIAL RELEASE CLASS A PER TDRR 30013		26 MAY 66	

8102204	1900011-031
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+ —	+ —
− —	− —	− —

DO NOT SCALE THIS DRAWING

MATERIAL ——

CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN R. PARKS DATE 22 APR 66
CHECKED JC Wilson 22 APR 66
APPROVAL
APPROVAL J. M. Watson 6-27-66
NASA APPROVAL [redacted]
MIT APPROVAL 7-5-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
BATTERY POWER PACK
(1900011-031)

CODE IDENT NO. 99974
SIZE B
8102205
SCALE ——
SHEET 2 OF 4

MIL 10778-D 11-18-64

8102205 H

QTY	PART NUMBER	DESCRIPTION	
3	1016073-143	DUMMY RECEPTACLE	SEE NOTE 2
3	1016073-163	DUMMY RECEPTACLE	SEE NOTE 2
1	1016073-103	DUMMY RECEPTACLE	SEE NOTE 2
1	1010400-006	CABLE CLAMP	SEE NOTE 2
1	MS3181-16C	CAP, PROTECTIVE	
1	1004260-510	NAMEPLATE	
1	1902621	LEAD SET	
1	CL25BJ151UP3	(1897081-320) CAPACITOR	
1	2901443	CABLE, ELECTRICAL (W186)	
1	2901444	CABLE, ELECTRICAL (W187)	
1	2901445	CABLE, ELECTRICAL (W188)	
1	2901447	CABLE, ELECTRICAL (W192)	
1	2901199	SLEEVE, IDENTIFICATION	
1	2901475	SLEEVE, IDENTIFICATION	
1	2901533	GUARD, SWITCH	
2	MS35200-15	SCREW, FLAT HD.	
1	1897425	TRANSFORMER	
1	2901442	PLATE, INSTRUCTION	
1	1897424-001	DUMMY RECEPTACLE	
3	1016105-004	CLAMP	
28	1016151-004	NUT, SELF LOCKING	
5	1006783-44	SCREW	

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	THIS SHEET ADDED		22 APR 66	RP JCW
D	REVISED PER MXC 211828		28 APR 66	JJJ RWH
E	REVISED PER MXC 212047		5 MAY 66	
F	REVISED PER MXC 212126		5 MAY 66	RP
G	REVISION STATUS CHANGED		19 MAY 66	CP
H	INITIAL RELEASE CLASS A PER TDRR 30013		26 MAY 66	

8102204	1900011-031
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
− — − — − —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R. PARKS DATE 22 APR 66
CHECKED J C Wilson 22APR66
APPROVAL
APPROVAL J. M. Watson 6-27-66
NASA APPROVAL A. C. Metzger
MIT APPROVAL 7-5-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
BATTERY POWER PACK
(1900011-031)

CODE IDENT NO. 99974
SIZE B
8102205
SCALE —
SHEET 3 OF 4

MIL 10778-D 11-16-64

8102205 | H |

QTY	PART NUMBER	DESCRIPTION
1	1006783-23	SCREW
1	1016151-006	NUT, SELF LOCKING
4	1006783-12	SCREW
4	1016151-002	NUT, SELF LOCKING

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
F	THIS SHEET ADDED		5 MAY 66	RP
G	REVISION STATUS CHANGED		19 MAY 66	CP
H	INITIAL RELEASE CLASS A PER TDRR 30013		20 MAY 66	

8102204 NEXT ASSY	1900011-031 USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R. PARKS DATE 5 MAY 66
CHECKED 5 MAY 66
APPROVAL
APPROVAL J. M. Watson 6-28-66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 7-5-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:

BATTERY POWER PACK
(1900011-031)

CODE IDENT NO. 99974
SIZE B
8102205
SCALE
SHEET 4 OF 4

MIL 1077B-D 11-16-64

QTY	PART NUMBER	DESCRIPTION	
1			
2	1021575	SWITCH	SEE NOTE 2
1	1016252- 4	RESISTOR (2504 Ω)	
1	1016252- 5	RESISTOR (1535 Ω)	
1	1016252- 6	RESISTOR (730.1 Ω)	
1	1016252- 7	RESISTOR (2722 Ω)	
1	1016252- 8	RESISTOR (2964 Ω)	SEE NOTE 2
3	F02B125V2AS	(1897099-129) FUSE	
2	1004260-525	NAMEPLATE	
1	2901506	LEAD SET A-A	
1	1016080-515	METER	SEE NOTE 2
1	1897260-009	RESISTOR (VAR 5K)	SEE NOTE 2
8	1006783-018	SCREW	SEE NOTE 2
8	1016151-004	NUT, SELF LOCKING	SEE NOTE 2
1	1902634	PLATE, ADAPTER	
1	1902639	PLATE, INFORMATION	
1	0102110	RIB	
2	1897427-001	SCREW	
1	1016284-001	SPLICER	

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 61920		13 APR 66	RK / PJ
B	REVISED PER MXC 211829	—	28 APR 66	JJJ / RWH
C	REVISED PER MXC 212469	—	13 MAY 66	DKD / CP
D	REVISED PER MXC 212673	—	26 MAY 66	GM / JAC
E	INITIAL RELEASE CLASS A PER TDRR 30013		27 MAY 66	

V-APR-66

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102204	1900496-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN W. Munson DATE 17 FEB 66
CHECKED S. Diehl 18 FEB '66
APPROVAL J. M. Watson 6-27-66
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL 7-5-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT- PORTABLE
TEMPERATURE CONTROLLER
(1900496-011)

SIZE B
CODE IDENT NO. 99974
8102206
SCALE —
SHEET 1 OF 1

D 8102246

QTY	PART NUMBER	DESCRIPTION	
1	8102250	RETROFIT KIT-PORTABLE	
		TEMPERATURE CONTROLLER	
		(2900060-011) MARRIAGE KIT 3	
1	0102129	R.I.B.	
1	CL53CJ551UP3	(1896956-024) CAPACITOR	
		MIL-C-3965/11B	
1	2901562	BRACKET, CAPACITOR	
1	2901564	MOUNTING BLOCK	
4	1000093-15	SCREW, BUTTON HEAD	SEE NOTE 2.
1	1015832-18	RELAY	
1	1897260-008	RESISTOR, VARIABLE	
1	1004260-542	NAMEPLATE	
4	MS35216-17	SCREW	
1	2901582	LEAD SET	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPEC. CONTROL DRAWING.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	CHANGE PER DO-62266		9/2/66	
B	ADDED P/N 1015832-18, 1897260-008 1004260-542, MS35216-17 & ASSOC INFO	MXC 215341	11 OCT 66	JJB DPW
C	REVISED PER MXC 215648		14 OCT 66	10/14/66
D	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	10/14/66

8102158	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 20 JUNE 66
CHECKED 21 JUN 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB ~~MIS~~ APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
LIFTING TEMPERATURE CONTROLLER
(2900063-011) MARRIAGE KIT 3

SIZE B
CODE IDENT NO. 99974
8102246
SCALE ___
SHEET 1 OF 1

M L 10778—P

QTY	PART NUMBER	DESCRIPTION
1	8102251	RETROFIT KIT-OPTICS
		INERTIAL ANALYZER
		(2900023-031) MARRIAGE
		KIT 3
1	0102120	R.I.B.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	ADDED PART NO. 0102120 PER D.O. 62259.		30 Aug 1968	
B	INITIAL RELEASE CLASS A PER TDRR 32/23		11/28/66	10-13-66

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
8102158	8102158

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___
3 PLACE DECIMALS ± ___
ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Litzow DATE 17 JUNE 66
CHECKED M. Mastrung 21 JUN 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB ~~MIT~~ APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
OPTICS INERTIAL TEST SET
(2900022-031) MARRIAGE KIT 3

SIZE B
CODE IDENT NO. 99974
8102247
SCALE ___
SHEET 1 OF 1

M L 10778-P

B 8102249

QTY	PART NUMBER	DESCRIPTION
1	8102253	RETROFIT KIT-CABLE ASSY.
		SPECIAL PURPOSE ELEC-
		W157(6900045)MARRIAGE
		KIT 3
1	0102118	R.I.B.
1	8102256	RETROFIT KIT-SCM
		INTERCONNECT BOX
		(6900046-021)

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 62200		25-7-66	EF
B	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102158	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Litzow DATE 20 JUNE 66
CHECKED 21 JUN 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB ~~MIT~~ APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
INTERCONNECT CABLE SET-SPECIAL
LEM (6900043-031) MARRIAGE KIT 3

SIZE B
CODE IDENT NO. 99974
8102249
SCALE ___
SHEET 1 OF 1

MIL 10778-P

0922018

QTY	PART NUMBER	DESCRIPTION	
1	0102115	R.I.B.	
1	1004260-535	NAMEPLATE	
1	2901542	LEAD SET	
1	1015982-007	RELAY	SEE NOTE 2
3	1N459	(1896966-291) DIODE	
1	RC20GF301J	(1896952-036) RESISTOR	
1	RC20GF431J	(1896952-040) RESISTOR	
2	1N3029 B	(1896966-069) DIODE	
1	1016053-024	RESISTOR	SEE NOTE 2
6	1015864-135	INSUL, SLEEVING, ELEC, CLEAR	
1	1015864-137		
2	1015864-140		
1	1015864-163	INSUL, SLEEVING, ELEC, CLEAR	
2	1016151-006	NUT, SELF LOCKING	
1	1016053-029	RESISTOR	SEE NOTE 2
1	2901586	DECAL, FUNCTIONAL AREA	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 62166		5 July 66	A.J.h. AU
B	REVISED PER D.O. 62173		7-6 66	E.L. JAC
C	REVISION STATUS CHANGED	MXC 215343	12 OCT 66	EC APW
D	REVISED PER MXC 215649		14 OCT 66	10/14/66
E	REVISED PER MXC 215760		21 OCT 66	DG.
F	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	10-28-66

NEXT ASSY	USED ON
8102158	8102158
8102246	8102158
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___
3 PLACE DECIMALS ± ___
ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Litzow DATE 20 JUNE 66
CHECKED M. Manthey 21 JUN 66
APPROVAL J. Mikkelson 11-1-66
CONTRACT NAS 9-497
NASA APPROVAL A. C. Hitt
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
PORTABLE TEMPERATURE CONTROLLER
(2900060-011) MARRIAGE KIT 3

SIZE B | CODE IDENT NO. 99974 | 8102250
SCALE ——— | SHEET 1 OF 2

8102250 F

QTY	PART NUMBER	DESCRIPTION
2	1896962-003	TERMINAL
1	CL25BL700UP3	(1897081-324) CAPACITOR
~~1~~	~~RC42GF201J~~	~~(1896951-032) RESISTOR~~
4	1006783-95	SCREW, BUTTON HEAD
2	MS35233-12	SCREW, PAN HEAD
1	AN960C6	(1897006-026) FLAT WASHER
1	IN 2976 B	(1896966-075) DIODE
1	1015832-318	RELAY
1	1897260-008	RESISTOR, VARIABLE
1	2901555	PIN, STRAIGHT, HEADED
1	RW55V201	(1896928-068) RESISTOR
1	2901556	BRACKET, ELECTRONIC COMP

SEE NOTE 2

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	THIS SHEET ADDED PER D062166		5 July 66	J.F. AU
B	REVISED PER DO 62173		7-6 66	E.L. JAC
C	P/N IN2976 B, 1015832-318, 1897260-008, 2901555 & RW55V201, ADDED. P/N RC42GF201 DELETED	MXC 215343	12 OCT 66	EC DJW
D	REVISED PER MXC 215649		14 OCT 66	10/14/66
E	REVISION STATUS CHANGE		21 OCT 66	10/21/66
F	INITIAL RELEASE CLASS A PER TDRR 32123		11/29/66	10/24/66

Ⓐ THIS SHEET ADDED

NEXT ASSY	USED ON
8102158	8102158
8102246	8102158

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS +__ −
3 PLACE DECIMALS +__ −
ANGLES +__ −
DO NOT SCALE THIS DRAWING
MATERIAL ____
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. LITZOW DATE 20 JUNE 66
CHECKED M. MANNING 21 JUN 66
APPROVAL J. W. Watson 11-1-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB ~~NET~~ APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
PORTABLE TEMPERATURE CONTROLLER
(2900060-011) MARRIAGE KIT 3

SIZE B
CODE IDENT NO. 99974
8102250
SCALE ____
SHEET 2 OF 2

ML 10778-P

9 | 0522018

QTY	PART NUMBER	DESCRIPTION	
1	0102115	R.I.B.	
1	1004260-535	NAMEPLATE	
1	2901542	LEAD SET	
1	1015982-007	RELAY	SEE NOTE 2
3	1N459	(1896966-291) DIODE	
1	RC20GF301J	(1896952-036) RESISTOR	
1	RC20GF431J	(1896952-040) RESISTOR	
2	1N3029 B	(1896966-069) DIODE	
1	1016053-024	RESISTOR	SEE NOTE 2
6	1015864-135	INSUL, SLEEVING, ELEC, CLEAR	
1	1015864-137		
2	1015864-140		
1	1015864-163	INSUL, SLEEVING, ELEC, CLEAR	
2	1016151-006	NUT, SELF LOCKING	
1	1016053-029	RESISTOR	SEE NOTE 2
1	2901586	DECAL, FUNCTIONAL AREA	

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER D.O. 62166		5 July 66	A.J.H. AU
B	REVISED PER D.O. 62173		7-6-66	E.L. JAC
C	REVISION STATUS CHANGED	MXC 215343	12 OCT 66	EC APW
D	REVISED PER MXC 215649		14 OCT 66	10/14/66
E	REVISED PER MXC 215760		21 OCT 66	DG.
F	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	10-24-66
G	REVISION STATUS CHANGED.		23 JAN 67	REP.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102158	8102158
8102246	8102158

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Litzow DATE 20 JUNE 66
CHECKED M. Manhing 21 JUN 66
APPROVAL J. M. Watson 11-15-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
PORTABLE TEMPERATURE CONTROLLER
(2900060-011) MARRIAGE KIT 3

SIZE B | CODE IDENT NO. 99974 | 8102250
SCALE ——— | SHEET 1 OF 2

ML 10778-P

8102250 | G |

QTY	PART NUMBER	DESCRIPTION
2	1896962-003	TERMINAL
1	CL25BL700UP3	(1897081-324) CAPACITOR
~~1~~	~~RC42GF201J~~	~~(1896951-032) RESISTOR~~
4	1006783-95	SCREW, BUTTON HEAD
2	MS35233-12	SCREW, PAN HEAD
1	AN960C6	(1897006-026) FLAT WASHER
1	IN 2976 B	(1896966-075) DIODE
1	1015832-318	RELAY
1	1897260-008	RESISTOR, VARIABLE
1	2901555	PIN, STRAIGHT, HEADED
1	RW55V201	(1896928-068) RESISTOR
1	2901556	BRACKET, ELECTRONIC COMP
2	RC42GF121J	(1896951-027) RESISTOR
1	RC42GF750J	(1896951-022) RESISTOR
1	RC32GF271J	(1896953-049) RESISTOR
2	2901587	BRACKET, BATT RETAINER COVER
1	2901588-001	PAD, CUSHIONING
2	2901588-002	PAD, CUSHIONING

SEE NOTE 2

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	THIS SHEET ADDED PER D062166		5 July 66	A.J.F. AU
B	REVISED PER DO 62173		7-6-66	E.L. JAC
C	P/N IN2976 B, 1015832-318, 1897260-008, 2901555 & RW55V201, ADDED. P/N RC42GF201 DELETED	MXC 215343	12 OCT 66	EC DJW
D	REVISED PER MXC 215649		14 OCT 66	10/14/66
E	REVISION STATUS CHANGE		21 OCT 66	10/21/66
Ⓜ F	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	10/24/66
G	REVISED PER TDRR 32731.		23 JAN 67	REP M.W.

Ⓐ THIS SHEET ADDED

NEXT ASSY	USED ON
8102158	8102158
8102246	8102158

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS + −
3 PLACE DECIMALS + −
ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. LITZOW DATE 20 JUNE 66
CHECKED M. MANNING 21 JUN 66
APPROVAL J. W. Walton 11-18-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
PORTABLE TEMPERATURE CONTROLLER
(2900060-011) MARRIAGE KIT 3

SIZE B
CODE IDENT NO. 99974
8102250
SCALE
SHEET 2 OF 2

ML 10778-P

8102251 B

QTY	PART NUMBER	DESCRIPTION
1	8102254	RETROFIT KIT-TEST SELECTOR
		ASSEMBLY (2900028-021)
		MARRIAGE KIT 3
1	1004260-536	NAMEPLATE
1	0102119	R.I.B.
1	8102257	RETROFIT KIT-MONITOR PANEL
		ASSEMBLY (2900031-031)
		MARRIAGE KIT 3

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	ADDED PART NO. 0102119 AND PART NO. 8102257 & ASSOC. INFO.	D.O. 62259	30 Aug 1966	SJD
B	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	DMG 10/13/66

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102247	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Lizzano DATE 17 JUNE 66
CHECKED 21 JUN 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS. 9-497
NASA APPROVAL
~~ENT~~ CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
OPTICS INERTIAL ANALYZER
(2900023-031) MARRIAGE KIT 3

SIZE B CODE IDENT NO. 99974 8102251
SCALE ——— SHEET 1 OF 1

MIL 10778-P

C 8102251

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	ADDED PART NO. 0102119 AND PART NO. 8102257 & ASSOC. INFO.	D.O. 62259	30 Aug 1966	SJD
B	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	DMA 10/13/66 EA
C	REVISED PER TDRR 32962		16FEB 67	DR M.W.

QTY	PART NUMBER	DESCRIPTION
1	8102254	RETROFIT KIT-TEST SELECTOR
		ASSEMBLY (2900028-021)
		MARRIAGE KIT 3
1	1004260-536	NAMEPLATE
1	0102119	R.I.B.
1	8102257	RETROFIT KIT-MONITOR PANEL
		ASSEMBLY (2900031-031)
		MARRIAGE KIT 3
1	8102268	RETROFIT KIT- GYRO
		CAGING ELECTRONICS
		ASSEMBLY (2900029-021)
		-MARRIAGE KIT 3

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102247	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN E. Litzow 17JUNE 66 DATE
CHECKED M. Manning 21 JUN 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
OPTICS INERTIAL ANALYZER
(2900023-031) MARRIAGE KIT 3

SIZE B
CODE IDENT NO. 99974
8102251
SCALE ___
SHEET 1 OF 1

MIL 10778-P

8102258 A

QTY	PART NUMBER	DESCRIPTION
1	0102122	R.I.B.
1	8102259	RETROFIT KIT, CABLE ASSY W154 (2901469)

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 32123		11/28/66	10-13-66

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102158	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 25 Jul 66
CHECKED Ed Foster 26 JUL 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB ~~MF~~ APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT - CABLE SET,
INTERCONNECT - BLOCK II SPECIAL
(2900712-031)

SIZE B
CODE IDENT NO. 99974
8102258
SCALE ———
SHEET 1 OF 1

ML 10778--P

QTY	PART NUMBER	DESCRIPTION
1	0102122	R.I.B.
1	8102259	RETROFIT KIT, CABLE ASSY
		W154 (2901469)
32	MS171433	PIN
32	1897324-002	WASHER, FLAT
2	2901591-007	CLAMP, MOVABLE
4	2901591-004	CLAMP, MOVABLE
2	2901591-003	CLAMP, MOVABLE
2	2901591-002	CLAMP, MOVABLE
2	2901591-001	CLAMP, MOVABLE
2	2901590-007	GASKET
4	2901590-004	GASKET
2	2901590-003	GASKET
2	2901590-002	GASKET
2	2901590-001	GASKET

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 32123		11/18/66	10-13-66
B	REVISED PER TDRR 33272		3 APR 67	JC SC

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
8102158	8102158

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN [illegible] DATE 25 JUL 66
CHECKED Ed Foster 26 JUL 66
APPROVAL [illegible]
CONTRACT NAS 9-497
NASA APPROVAL [illegible]
CCB ~~MUT~~ APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT - CABLE SET,
INTERCONNECT - BLOCK II SPECIAL
(2900712-031)

SIZE B
CODE IDENT NO. 99974
8102258
SCALE ———
SHEET 1 OF 1

8102259 A

QTY	PART NUMBER	DESCRIPTION
1	0102122	R.I.B.
1	1016128-011	IDENTIFICATION BAND

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 32123		11/29/66	10-13-66

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

8102258	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS + −
3 PLACE DECIMALS + −
ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN J.A. Kudrnaki DATE 25 Jul 66
CHECKED Ed Foster 26 JUL 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT- CABLE ASSEMBLY,
SPECIAL PURPOSE ELECTRICAL-W154
(2901469)

SIZE B
CODE IDENT NO. 99974
8102259
SCALE —
SHEET 1 OF 1

M-L 10778-F

8102266 A

QTY	PART NUMBER	DESCRIPTION	
1	1004260-547	NAMEPLATE	
4	1015864-109	INSULATION SLEEVING, ELEC	SEE NOTE 2
1	2901572	LEAD SET	
1	RN60B2001F	(1896977-318) RESISTOR	
		MIL-R-10509/1	
1	0102130	R.I.B.	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 32/23		4/10/66	10/14/66

8102158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±
3 PLACE DECIMALS ±
ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS
DRAWN H.S. Mueller DATE 13 OCT 66
CHECKED Ed Foster 13 OCT 66
APPROVAL J. M. Watson 10-14-66
CONTRACT NAS 9A497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT — SCM/PSAAM TEST
& CAL. CSL. (2900895-011)

SIZE	CODE IDENT NO.	
B	99974	8102266

SCALE ——
SHEET 1 OF 1

8102273 A

QTY	PART NUMBER	DESCRIPTION
1	0102133	R.I.B
6	MS171433	PIN
6	1897324-002	WASHER, FLAT
2	2901591-007	CLAMP, MOVABLE
2	-004	
4	-003	
2	2901591-002	CLAMP, MOVABLE
2	2901590-007	GASKET
2	-004	
4	-003	
2	2901590-002	GASKET

SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 33277		17 MAR 67	16 JAN 67

8102158	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 29-DEC-66
CHECKED 29 Dec 66
APPROVAL J. M. Watson 3-17-67
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
ADAPTER CABLE ASSEMBLY SET,
ELECTRICAL-BLOCK II
(P/N 2901076-011)

SIZE	CODE IDENT NO.	
B	99974	8102273

SCALE ___ SHEET 1 OF 1

8102274

QTY	PART NUMBER	DESCRIPTION
1	0102133	R.I.B.
6	MS171433	PIN
6	1897324-002	WASHER, FLAT
4	2901591-004	CLAMP, MOVABLE
3	2901591-003	CLAMP, MOVABLE
4	2901590-004	GASKET
3	2901590-003	GASKET

SEE NOTE 2

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 33277		17 MAR 67	16 JAN 67

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

8102158	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 29 DEC 66
CHECKED 29 Dec 66
APPROVAL J. M. Watson 3-13-67
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
BREAKOUT BOX AND ADAPTER
CABLE SET, - BASIC
(P/N 2901075-011)

SIZE B
CODE IDENT NO. 99974
8102274
SCALE ———
SHEET 1 OF 1

SL22018

QTY	PART NUMBER	DESCRIPTION
1	0102133	R.I.B.
6	MS171433	PIN
6	1897324-002	WASHER, FLAT
2	2901591-001	CLAMP, MOVABLE
2	2901590-001	GASKET

SEE NOTE 2

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 33277		17 MAR 67	16 JAN67 CA

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

8102247	8102158
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 29 DEC 66
CHECKED 29 Dec 66
APPROVAL 3-13-67
CONTRACT NAS 9-497
NASA APPROVAL AC
CCA APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
INTERCONNECT CABLE SET-
BASIC
(P/N 2900025-031)

SIZE B
CODE IDENT NO. 99974
8102275
SCALE ———
SHEET 1 OF 1

QTY	PART NUMBER	DESCRIPTION	
1	0102133	R.I.B.	
6	MS171443З	PIN	
6	1897324-002	WASHER, FLAT	SEE NOTE 2
4	2901591-006	CLAMP, MOVABLE	
2	2901591-001	CLAMP, MOVABLE	
4	2901590-006	GASKET	
2	2901590-001	GASKET	

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 33277			16 JAN 67

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102158	8102158

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN 29 DEC 66 DATE
CHECKED 29 Dec 66
APPROVAL 3-13-67
CONTRACT NAS 9-497
NASA APPROVAL
C&A APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
ADAPTER CABLE ASSEMBLY SET,
ELECTRICAL - LEM
(P/N 6900077-011)

SIZE	CODE IDENT NO.	
B	99974	8102276

SCALE ——— SHEET 1 OF 1

8102302 A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 37299		5 Feb 69	

LIST OF PARTS AND MATERIALS

NO REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	0102158	R.I.B.
1	1004260-586	NAMEPLATE
3	F02A250V5A	(1897099-014) FUSE, MIL-F-15160/02
1	2901663	STENCIL, IDENTIFICATION

APPLICATION

NEXT ASSY	USED ON
1021201	1900342-041

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ~ 3 PLACE DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ~
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R S Komanski DATE 12 DEC 68
CHECKED Morshek 13 Dec 68
APPROVAL J. M. Watson 23-JAN 69
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 24 Jan 69

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
INERTIAL COMPONENTS TEMPERATURE
CONTROLLER, PN 1900342-041
ECP ACSK 748

SIZE B
CODE IDENT NO. 99974
8102302
SCALE ~
SHEET 1 OF 1

MIL 10778 D 11-16 64

8102303 A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 37299.		5 Feb 69	Smith

LIST OF PARTS AND MATERIALS

NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	0102158	R.I.B.
1	1004260-587	NAMEPLATE
3	F02A250V5A	(1897099-014) FUSE, MIL-F-15160/02
1	2901663	STENCIL, IDENTIFICATION

APPLICATION

NEXT ASSY	USED ON
1021201	1901492-051

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ~
3 PLACE DECIMALS ± ~
ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ~
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.

DRAWN R S Romanski DATE 12 DEC '68
CHECKED P Novshek 13 DEC 68
APPROVAL J. M. Watson 23 JAN 69
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 29 Jan 69

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT,
AUXILIARY BATTERY PACK,
PN 1901492-051
ECP ACSK 748

SIZE B
CODE IDENT NO. 99974
8102303
SCALE ~
SHEET 1 OF 1

MIL 10778-D 11-16-64

8102603

QTY	PART NUMBER	DESCRIPTION
1	0102601	RIB
5	1015500-021	CDU ASSEMBLY

REVISIONS 17047

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN K W Heisel DATE 25 FEB 65
CHECKED 25 FEB 65
APPROVAL 25 FEB 65
APPROVAL 26 FEB 65
NASA APPROVAL W J Rhine 3-2-65
MIT APPROVAL 4 Mar 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: ECP 0020
CDU AND FRAME ASSEMBLY
(1016905-011)

CODE IDENT NO.
SIZE B
8102603
SCALE
SHEET 1 OF 1

MIL 10778—P

REVISIONS 17047				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER TDRR 18976		14 MAY 65	A.N. EF

QTY	PART NUMBER	DESCRIPTION
1	0102601	RIB
1	1015064-011	CONTROL ELECTRONICS
1	1015065-011	D & C ELECTRONICS

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN DATE 25 FEB 65
CHECKED 25 FEB 65
APPROVAL 25 FEB 65
APPROVAL 3/1/65
NASA APPROVAL 3-2-65
MIT APPROVAL 2 Mar 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: ECP 0020
D & C GROUP
(1014513-021)

CODE IDENT NO. 80230
SIZE B
8102604
SCALE —
SHEET 1 OF 1

MIL 10778-F

8102604

REVISIONS 17047				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.

QTY	PART NUMBER	DESCRIPTION
1	0102602	RIB
1	1015064-011	CONTROL ELECTRONICS
1	1015065-011	D&C ELECTRONICS

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 25 FEB 65 DATE
CHECKED 25 FEB 65
APPROVAL 25 FEB 65
APPROVAL 3/1/65
NASA APPROVAL 3-2-65
MIT APPROVAL 2 Mar 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: ECP 0020
D&C GROUP
(1014513-021)

CODE IDENT NO.
SIZE B
8102604
SCALE —
SHEET 1 OF 1

MIL 10778—F

8102625 | A1

QTY	PART NUMBER	DESCRIPTION
1	0102611	RIB

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 27453		11 MAR 66	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Friedl DATE 16 DEC 65
CHECKED 17 DEC 65
APPROVAL R E Lietz 17/12/65
APPROVAL N/A: for release only see TDRR 27453
NASA APPROVAL 3/1/66
Documentation MIT APPROVAL 29 Mar 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: ECP 2;9
COATING OF BERYLLIUM SURFACES
EXPOSED TO C/M ATMOSPHERE

CODE IDENT NO.	SIZE	
80230	B	8102625
SCALE —		SHEET 1 OF 1

MIL 10778-P

8102626

QTY	PART NUMBER	DESCRIPTION
1	0102612	RIB
1	1023036-011	RELAY & DIODE MODULE
4	1023032	SCREW
4	MS15795-303	WASHER, FLAT

REVISIONS 25468

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN HETCHLER DATE 21 DEC 65
CHECKED 22 DEC 65
APPROVAL Paul Watson 18 JAN 66
APPROVAL 1/10/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 20 Jan 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR: D&C ELECTRONICS
P/N 1015065-031, -041
ECP-ACSK 0246

CODE IDENT NO. 99974
SIZE B
8102626
SCALE —
SHEET 1 OF 1

MIL 1077B—F

REVISIONS 26614

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

QTY	PART NUMBER	DESCRIPTION
	0102617	RIB
10	1008333	RETAINER JACK SCREW
1	ND1002009	METHOD J STAKING MATERIAL
259	1008861-018	SCREW, CAP SOCKET HEAD
4	1008337	GASKET, CONNECTOR TRAY
10	1008338	GASKET, CONNECTOR TRAY
4	1008335	GASKET, WASP
1	1007402-021	AMPLIFIER 1% 3200 CPS
3	1007540-041	GIMBAL SERVO AMPLIFIER
3	1007541-041	GIMBAL COARSE ALIGN AMPL.
1	1007542-021	POWER SUPPLY -28VDC
1	1007543-041	AAC FILTER & MVB (3200 CPS)
1	1007545-041	TEMP. CONT. PWR. SUPPLY 20V 3200
1	1007531-041	FRAME ASSEMBLY
1	ND1002292	PAINTING REQUIREMENTS
1	ND1002151	BONDING REQUIREMENTS
1	1007571-041	GIMBAL SERVO ELEC. ASSY TRAY 1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
8102649	1021200

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 23 Feb 66
APPROVAL 23 Feb 66
APPROVAL
A. C. METZGER
NASA APPROVAL
MIT APPROVAL 23 Feb 66.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
PSA
ECP 250 AND ECP 84R

CODE IDENT NO. 80230
SIZE B
8102634
SCALE
SHEET 1 OF 4

MIL 10778—P

QTY	PART NUMBER	DESCRIPTION
1	1007572-051	P/S ELECT. ASSY TRAY-2
3	1007548-021	AMPLIFIER 5% 800 CPS
1	1007532-041	FRAME ASSEMBLY
1	1007551-021	FAILURE INDICATOR
2	1007437-021	AMPLIFIER 1% 800 CPS
2	1007546-021	AAC 800 CPS FILTER & MULTIVIBRATOR
2	1007549-041	POWER SUPPLY 25.6 KC ENCODER
2	1007412-021	PULSE TORQUING POWER SUPPLY
1	1007573-041	GYRO-ACCEL. ELEC. ASSY TRAY-3
3	1007427-021	BINARY CURRENT SWITCH
3	1007419-021	INTERROGATOR
3	1007517-021	AC DIFFERENTIAL AMPLIFIER
6	1007507-041	DC DIFF. AMPL & PVR
1	1007533-041	FRAME ASSEMBLY
1	1007574-041	GYRO-ACCEL. ELEC. ASSY. TRAY-4
3	1007516-021	TERNARY CURRENT SWITCH
1	1007534-041	FRAME ASSEMBLY
1	1007575-041	CDU & GYRO ACCEL. ELEC. TRAY-5
1	1007535-041	FRAME ASSEMBLY
5	1007414-021	ENCODER
5	1007555-021	CDU DTOA CONVERTER

REVISIONS 26614

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

8102649	1021200
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
–	–	–

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN ________ DATE ____

CHECKED 23

APPROVAL 23 Feb 66

APPROVAL ________

NASA APPROVAL A. B. METZGER

MIT APPROVAL 23 Feb 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
PSA
ECP 250 AND ECP 84R

CODE IDENT NO.	SIZE	
80230	B	8102634
SCALE		SHEET 2 OF 4

MIL 10778-F

QTY	PART NUMBER	DESCRIPTION
1	1007558-021	FWD-REV, CTR & CMPTR OUTPUT
1	1007561-021	CDU ZEROING & LOCK RELAYS
6	1008336	GASKET, MINI-WASP
6	1008339	GASKET, CONNECTOR TRAY
1	1007456-031	CDU & P/S ELECT. TRAY-6
1	1007446-021	FRAME ASSEMBLY
1	1007564-021	CDU ZEROING TRANS. RELAYS
3	1007560-021	MOTOR DRIVE AMP. & SEL. CIRCUIT
1	1007462-021	CDU RESOLVER LOADS
1	1007577-041	MISC. ELECT. ASSY. TRAY 7
1	1007426-021	IMU TEMP. CONTROLLER
1	1007563-021	CDU FIXED RESOL. TRANS. & ENTRY
1	1007518-041	IMU TEMP. IND. ALARM & REV. CONT.
1	1007537-041	FRAME ASSY.
1	1007458-021	OPTICAL ELECT. ASSY. TRAY 8
1	1007448-021	FRAME ASSEMBLY
1	1007487-021	ZERO OPTICS
6	1007482-021	MOTOR DRIVE AMP.
2	1007480-021	TWO-SPEED SWITCH
1	1007483-021	COSECANT GENERATOR
1	1007481-021	MOTOR DRIVE PREAMP

REVISIONS 26674

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

NEXT ASSY	USED ON
8102649	1021200

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN ____ DATE ____
CHECKED 23Feb66
APPROVAL 23Feb66
APPROVAL ____
NASA APPROVAL A. C. METZGER
MIT APPROVAL 23Feb66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
PSA
ECP 250 AND ECP 84R

CODE IDENT NO. 80230
SIZE B
8102634
SCALE
SHEET 3 OF 4

MIL 10778-P

QTY	PART NUMBER	DESCRIPTION
1	1007523-021	RESOLVER DRIVE AMP.
2	1007485-021	RELAY
2	1007484-021	BUFFER CIRCUIT
1	1007459-021	OPTICAL ELECT. ASSY. TRAY 9
1	1007449-021	FRAME ASSEMBLY
1	1007401-021	ISOLATION TRANSFORMER
1	1007486-031	SERVO MOTOR DRIVE PREAMP
1	1007488-021	RESISTOR & CAPACITOR
1	1007256-041	PWR. DIODES & SIG. COND. TRAY 10
1	1007258-031	FRAME ASSEMBLY
3	1007590-031	G&N SUB SYS. SUPPLY FILTER
1	1007591-021	800 CPS COMPENSATION
1	1007525-021	P/S MODULE ASSY
4	1000250-12	SCREW-BUTTON HD. SPLINE SOC.
1	1000021	PLATE IDENTIFICATION
1	1007220	TOE CAP POWER & SERVO ASSY.

REVISIONS 26614

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

NEXT ASSY	USED ON
8102649	1021200

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN ______ DATE ______
CHECKED 23Feb66
APPROVAL 23Feb66
APPROVAL ______
NASA APPROVAL A. C. METZGER
MIT APPROVAL 23Feb66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
PSA
ECP 250 AND ECP 84R

CODE IDENT NO.	SIZE	
80230	B	8102634

SCALE

SHEET 4 OF 4

MIL 1077B—P

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 26820		25 JAN 66	

QTY	PART NUMBER	DESCRIPTION
1	0102618	RIB
10	1008333	RETAINER, JACK SCREW
4	1008337	GASKET, CONNECTOR TRAY
10	1008338	GASKET, CONNECTOR TRAY
3	1007590-31	FILTER, GEN SUB SYSTEM SUPPLY
6	1008339	GASKET, CONNECTOR TRAY
6	1008336	GASKET, MINI-WASP
1	1000021	PLATE, IDENTIFICATION
263	1008861-018	SCREW, CAP, SOC. HD.
		AAC FILTER & MVB (3200 CPS)
4	1008335	GASKET, WASP
4	1000250-12	SCREW, BUTTON HEAD SELF-
		LOCKING SPLINE SOCKET

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

NEXT ASSY	USED ON
1021200	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS + − 3 PLACE DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN Bob Kaling 17 JAN 66 DATE
CHECKED M. Manning 21 JAN 66
APPROVAL 24 Feb 66
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
POWER AND SERVO ASSEMBLY
(1007570) SERIES 100,
ECP 266 AND ECP269.

SIZE B
CODE IDENT NO. 80230
8102635
SCALE —
SHEET 1 OF 1

MIL 10779-P

8102646 | B

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	INITIAL RELEASE CLASS A PER TDRR 26641		10 FEB 66	

QTY	PART NUMBER	DESCRIPTION	
1	0102626	R.I.B.	
1	1015902-3	LUG, TERMINAL	SEE NOTE 2
1	1008329	BLOCK SPACER	
2	1010618-26	SCREW, BUTTON HEAD	SEE NOTE 2
5	1021307	GASKET, CONNECTOR	
11	AN507C832-6	(1897003-064) SCREW	
1	1010952-002	SPLICE BUTT	SEE NOTE 2
2	1012534-49	SLEEVE, HEAT SHRINK	SEE NOTE 2
1	1012534-36	SLEEVE, HEAT SHRINK	SEE NOTE 2
10	8102646-001	WIRE PER 1010789-001 24 AWG YEL, 12 INCHES TOTAL LENGTH	
1	1010400 1-18	CLAMP LOOPED HINGED	SEE NOTE 2 & 3
1	1010705-8	CLAMP LOOP	SEE NOTE 2
8	1010731-296	SCREW, FLAT HEAD	SEE NOTE 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.
3. SELECT SIZES TO CONFORM TO BUNDLE DIAMETER.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS 3 PLACE DECIMALS ANGLES
+___ +___ +___
- - -
DO NOT SCALE THIS DRAWING
MATERIAL ______
APPROVAL

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE 1 Feb 66
CHECKED 2 FEB 66
APPROVAL FEB 3 66
CONTRACT NAS 9-497
NASA APPROVAL E. C. METZGER
MIT APPROVAL 24 Feb 66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT- AGE HARNESS AND
PSA END CONNECTOR ASSEMBLY
1015086-000
ECP 225 AND ECP 270

SIZE B
CODE IDENT NO. 80230
8102646
SCALE ——
SHEET 1 OF 1

MIL 10778-P

8102680 D

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISION STATUS CHANGED		8-10-66	EF
B	REVISED PER ECM 214703		8-26-66	MEM
C	REVISION STATUS CHANGED		8-30-66	WSM
D	INITIAL RELEASE CLASS A PER TDRR 30861		8-30-66	8/30

QTY	PART NUMBER	DESCRIPTION
1	1021332	COVER AND BAFFLE (TELESCOPE)
		(INSEP ASSY)
1	1021331	SEXTANT COVER & BAFFLE
		(INSEP ASSY)
1	1021321	SEAT, SEXTANT COVER
1	1021329	CROWN HALF, LOWER,
		SEXTANT COVER (INSEP ASSY)
1	1021337	CROWN HALF, LOWER,
		TELESCOPE COVER (INSEP ASSY)
2	1021320	CROWN HALF, UPPER,
		SEXTANT COVER
1	1021338	FILLET, PROTECTOR,
		TELESCOPE COVER
4	1021326	SCREW, SLOTTED, SPECIAL,
		SEXTANT COVER
7	1021324	INSULATOR
2	1021323	INSERT
4	1021322-001	PLUG
2	1021325	NUT, SLOTTED, FLAT CSK, HD.
7	1021341-001	WASHER

NOTES: 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN 3 AUG 66
CHECKED DATE 3 AUG 66
APPROVAL 11 Aug 66
CONTRACT NAS 9-497
NASA APPROVAL 8/13/66
AC APPROVAL 8/30/66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
ASTROSEXTANT PASSIVE THERMAL
PROTECTION SYSTEM BLOCK I "100"

SIZE B
CODE IDENT NO. 99974
8102680
SCALE ___
SHEET 1 OF 2

8102680 D

QTY	PART NUMBER	DESCRIPTION
4	1021339-001	SCR, CAP, SOCKET HEAD
4	1021341-002	WASHER
~~4~~	~~1006783-24~~	~~SCR, BUTTON HD, HEX SOC~~
4	1010630-17	SCREW, FLAT HD.
1	1021339-002	SCR CAP, SOCKET HEAD
100GM	1008903	ADHESIVE
1	1021340	POTTING RING, TELESCOPE
1	0102654	R. I. B.
1	1014650-19	NAMEPLATE
2	1021339-003	SCREW, CAP, SOCKET HEAD
3	1021322-002	PLUG

NOTES (CONT'D): 2. MACHINE P/N 1021320 TO FIT P/N 1021329 AND P/N 1021338 TO FIT P/N 1021337 PRIOR TO KIT ASSEMBLY. TO PROVIDE A .015/.030 GAP AND ±.015 SURFACE MATING FEATURE. SEAL MACHINED SURFACES PER ND 1002328-001

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD
A	REVISED PER D.O. 62229		8-10-66	EF
B	REVISED PER ECM 214703		8-26-66	mgm
C	REVISED PER ECM 309838		8-30-66	WSM
D	INITIAL RELEASE CLASS A PER TDRR 30861		8-30-66	8/30

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN 3AUG66 DATE
CHECKED 3AUG'66
APPROVAL 11AUG66
CONTRACT NAS 9-497
NASA APPROVAL 8/31/66
AC APPROVAL 8/30/66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR:
ASTROSEXTANT PASSIVE THERMAL
PROTECTION SYSTEM BLOCK I "100"

SIZE	CODE IDENT NO.	
B	99974	8102680

SCALE ___ SHEET 2 OF 2

D892018

REVISIONS TDA 31551

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

QTY	PART NUMBER	DESCRIPTION
1	0102643	R.I.B.
4	NAS674V19	BOLT, HEX. CAP
2	2021204	BUSHING, SLEEVING, IMU MOUNT
1	1004260-508	PLATE, IDENTIFICATION

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___
3 PLACE DECIMALS ± ___
ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN 23 AUG 66
CHECKED M. Manning 24 AUG 66
APPROVAL 25 AUG 66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL 10/14/66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
LEM NAVIGATIONAL BASE
(6899980-011)

SIZE B
CODE IDENT NO. 80230
8102684
SCALE ___
SHEET 1 OF 1

MIL 10778-F

8102685

REVISIONS 31551

SYM	DESCRIPTION	CHG NO.	DATE	APPD.

QTY	PART NUMBER	DESCRIPTION
1	0102643	R.I.B.
4	NAS674V19	BOLT, HEX. CAP
2	2021204	BUSHING, SLEEVING-IMU MOUNT
1	1004260-101	PLATE, IDENTIFICATION

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN 23 AUG 66 DATE
CHECKED M. Manning 24 AUG 66
APPROVAL 24 AUG 66
CONTRACT NAS 9-497
NASA APPROVAL
~~TEC~~ CCB APPROVAL 10/14/66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
LEM NAVIGATIONAL BASE
(6899950-011)

SIZE B
CODE IDENT NO. 80230
8102685
SCALE ___
SHEET 1 OF 1

8102692 | B

QTY	PART NUMBER	DESCRIPTION
1	1021362-011	DUST COVER ASSY (SXT)
1	1021352-011	DUST COVER ASSY (SCT)
2	1021358-011	RETAINER ASSY, DUST COVER
2	1021358-021	RETAINER ASSY, DUST COVER
1	0102670	R.I.B.
1 QT.	1008903	EPOXY ADHESIVE (EPON 954)
1 PINT	1006721	CATALYST

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER ECM 215903		12 NOV 66	JRK EG
B	INITIAL RELEASE CLASS A PER TDRR 32 202		12/1/66	JRK EG

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

2 PLACE DECIMALS	3 PLACE DECIMALS	ANGLES
+ ___	+ ___	+ ___
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL ———

APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT

DRAWN J. Parks DATE 17SEP66
CHECKED W. Wuhl 19 Oct '66
APPROVAL R. Temple 19 Oct 66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
ASTROSEXTANT PASSIVE THERMAL
PROTECTIVE SYSTEM ASSEMBLY
ECP-426 & 427

SIZE	CODE IDENT NO.	
B	80230	8102692

SCALE ——— SHEET 1 OF 1

MIL 10778-P

8102704 B

QTY	PART NUMBER	DESCRIPTION
1	0102673	R.I.B.
1	1021382	SEAT, SEXTANT COVER
1	1008495	SEAT, TELESCOPE
4	1008494	SCREW, FLAT HEAD
1	1008490-011	COVER AND BAFFLE-TELESCOPE
1	1008480-011	COVER AND BAFFLE-SEXTANT
4	1008484-000	SCREW, CAPTIVE
2	1021379	FASTENER, SCREW TUBE, FLAT HD.
1	1021383	CLAMP, SEXTANT COVER
6	1008484-001	SCREW, CAPTIVE
1	1021340	POTTING RING, TELESCOPE

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER ECM 217121		27 DEC 66	DG / RWH
B	INITIAL RELEASE CLASS A PER TDRR 33013		16 FEB 67	3 JAN 67

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN Frank R. Walker DATE 25 NOV 66
CHECKED 29 NOV 66
APPROVAL D. Tschebold 29 Nov. 66
CONTRACT NAS 9-497
NASA APPROVAL A C
CCO APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
OPTICAL UNIT AND BELLOWS ASSY.
2010790 (ADDITION OF COVERS)
BLOCK II ECP 0428

SIZE B
CODE IDENT NO. 80230
8102704
SCALE ———
SHEET 1 OF 1

MIL 10778-P

8102704 | C

QTY	PART NUMBER	DESCRIPTION
1	0102673	RIB.
1	1021382	SEAT, SEXTANT COVER
1	1008495	SEAT, TELESCOPE
4	1008434	SCREW, FLAT HEAD
1	1008490-021	COVER AND BAFFLE - TELESCOPE
1	1008490-011	COVER AND BAFFLE - SEXTANT
4	1008484-000	SCREW, CAPTIVE
2	1021379	FASTENER, SCREW TUBE, FLAT HD.
1	1021383	CLAMP, SEXTANT COVER
6	1008484-001	SCREW, CAPTIVE
1	1021340	POTTING RING, TELESCOPE

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER ECM 217121		27 DEC 66	DB RWH
Ⓜ B	INITIAL RELEASE CLASS A PER TDRR 33013		16 FEB 67	3 JAN 67
C	REVISED PER TDRR 33025		6 MAR 67	DB

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ——
3 PLACE DECIMALS ± ——
ANGLES ± ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN Frank R Walker DATE 25 NOV 66
CHECKED 29 NOV 66
APPROVAL 29 Nov. 66
CONTRACT NAS 9-497
NASA APPROVAL A C
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT -
OPTICAL UNIT AND BELLOWS ASSY.
2010790 (ADDITION OF COVERS)
BLOCK II ECP 0428

SIZE B
CODE IDENT NO. 80230
8102704
SCALE ——
SHEET 1 OF 1

8102705 | B |

QTY	PART NUMBER	DESCRIPTION
1	0102674	R.I.B.
4	1008487-001	SCREW, CAP, SLOTTED HEAD
1	1008487-002	SCREW, CAP, SLOTTED HEAD
4	1008487-003	SCREW, CAP, SLOTTED HEAD
13	1008486	WASHER, SCREW
4	1008488-000	SCREW, SLOTTED, SPECIAL
7	1008493	INSULATOR
1	1021378-021	CROWN HALF AND PLUG
		ASSY - SEXTANT
1	1021377-021	CROWN HALF AND PLUG
		ASSY-TELESCOPE

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	REVISED PER ECM 217122		27 DEC 66	DG RWH
B	INITIAL RELEASE CLASS A PER TDRR 33013		16 FEB 67	3 JAN 67

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN Frank R. Walker DATE 25 NOV 66
CHECKED 29 NOV 66
APPROVAL 29 Nov 66
CONTRACT NAS 9-497
NASA APPROVAL
CCB APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
ASTROSEXTANT PASSIVE THERMAL
PROTECTIVE SYSTEM ASSY, 1021373
(ADDITION OF CROWNS) BLOCK II ECP0428

SIZE	CODE IDENT NO.	
B	80230	8102705

SCALE ——— SHEET 1 OF 1

MIL 10778-F

8102707 A

QTY	PART NUMBER	DESCRIPTION
1	0102666	R.I.B.
3	2007114-021	GIMBAL SERVO AMPLIFIER
1	1004260-516	NAMEPLATE
1	1004260-524	NAMEPLATE

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 32399		12/28/66	7 DEC 66 JFP

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ____ 3 PLACE DECIMALS ± ____ ANGLES ± ____
DO NOT SCALE THIS DRAWING
MATERIAL ____
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE 30 NOV 66
CHECKED 30 Nov/66
APPROVAL J. Petrangi 30 NOV 66
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-POWER, SERVO
AND THERMOCOUPLE ASSEMBLY
C/M AND LEM
ECP 461

SIZE	CODE IDENT NO.	
B	80230	8102707
SCALE ――		SHEET 1 OF 1

MIL 10778-P

8102730 A

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 34075		30 JUN 67	19 MAY 67

PART NUMBER	DESCRIPTION	QTY
1010902-4	SWITCH, TOGGLE	1
1010902-5	SWITCH, TOGGLE	1
1010905-4	SWITCH, TOGGLE	1
1010907-2	SWITCH, PUSHBUTTON	2
1010930-104	CONNECTOR, ELECTRICAL	1
1023012-001	ADAPTER, POTTING	1

NOTE:

REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PREMODIFICATION AND POSTMODIFICATION IDENTIFICATION OF AFFECTED HARDWARE

1021200	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+—	+—	+—
——	——	——

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DWG. NO CONTRACT

DRAWN J. Leonard DATE 15 MAY 67
CHECKED R. G. Heinz 15 MAY 67
APPROVAL D. W. Miley 15 MAY 67
P C Watson JUN. 12, 67
APPROVAL 6/12/67
NASA APPROVAL
APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
FOR G&N INDICATOR CONTROL
PANEL ASSY 2014578-031
FOR ECPACSK 0569

CODE IDENT NO.	SIZE	
80230	B	8102730
SCALE —		SHEET 1 OF 1

MIL 10778-D 11-16-64

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

3. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

REVISIONS					
SYM	DESCRIPTION		CHG NO.	DATE	APPD.
C	INITIAL RELEASE CLASS A PER TDRR 34557.			7 SEPT 67	10AUG67

SEE NOTE 2 (applies to the first six rows)

NO. REQD.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	1008940-004	BAND, MARKER BLANK - CABLE
1	1008940-002	BAND, MARKER BLANK - CABLE
2	1008940-001	BAND, MARKER BLANK - CABLE
10 FT	1008937-007	TAPE, PRESS. SENS ADH, AL FOIL BACKED
20 FT	1008937-003	TAPE, PRESS. SENS ADH, AL FOIL BACKED
30 FT	1008936-001	TAPE, LACING
1	1004260-198	NAMEPLATE
1	1004260-197	NAMEPLATE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN E. HARRIS DATE 5 MAY 1967
CHECKED R. MOSER 19 MAY 1967
APPROVAL J. PETRANYI 19 MAY 1967
APPROVAL
NASA APPROVAL
MIT APPROVAL WStamerie 21 Aug 67

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
SIGNAL CONDITIONER ASSEMBLY
C/M-ECP0623

CODE IDENT NO.	SIZE	
80230	B	8102731
SCALE —		SHEET

MIL 10778-D 11-16 64

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
3. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

REVISIONS				
SYM	DESCRIPTION		DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 34862	CHG NO.	19 OCT 67	11 JUL 67 GA

NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2021327	CAP, PUSHBUTTON
1	2021328	CAP, PUSHBUTTON
2	NAS1081C04-D4L	SCREW, SET, SELF LOCK
1	MS51923-187	PIN, ROLL
1	6010679	PANEL, LAMP RETAINER
1	6010680	CUP, LAMP
AR	1008937-007	TAPE, ALUMINUM FOIL
AR	1008936-003	TAPE, LACING AND TYING
1	1008940-004	BAND, MARKER
1	1004260-566	NAMEPLATE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN E. Harris DATE 22 JUNE 1967
CHECKED R. MOSER 23 JUNE 67
APPROVAL D.W. Miller 23 JUNE 67
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR-COMPUTER CONTROL & RETICLE DIMMER ASSY. 6014512-041
(ECP- ACSK0594)

CODE IDENT NO 80230
SIZE B
8102735
SCALE NONE
SHEET 1 OF 1

8102738 | A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
3. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 34862		19 OCT 67	11 JUL 67

NO. REQU	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	6010679	PANEL, LAMP RETAINER
1	6010680	CUP, LAMP
AR	1008937-007	TAPE, ALUMINUM FOIL
AR	1008936-003	TAPE, LACING AND TYING
1	1008940-004	BAND, MARKER
2	2021327	CAP, PUSHBUTTON
1	2021328	CAP, PUSHBUTTON
2	NAS1081C04D4L	SCREW, SET, SELF LOCK
1	MS51923-187	PIN, ROLL

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN H. Kuehn DATE 23 JUNE 1967
CHECKED R. MOSER 23 JUNE 67
APPROVAL D.W. Mindey 23 June 67
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT FOR COMPUTER CONTROL AND RETICLE DIMMER ASSEMBLY 6014512-031
(ECP- ACSK0594)

CODE IDENT NO. 80230
SIZE B
8102738
SCALE NONE
SHEET 1 OF 1

MIL 10778 D 11 16 64

8102743 B

A = DO 66452

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

3. MODULE P/N 2007238-061 MAY BE REPLACED BY MODULE P/N 2007238-051.

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	INITIAL RELEASE CLASS A PER TDRR 34523		7 SEPT 67	27 JUL 67

SEE NOTE 3	5	2007238-061	MSA & QUADRATURE REJECTION ASSY (GFP)
	1	1004260-158	NAMPLATE
	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ −	+ −	+ −
− −	− −	− −

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DWG NO
CONTRACT

DRAWN H Leonard DATE 13 JUL 67
CHECKED [illegible] 14 July 67
APPROVAL R E [illegible] 26 July 67
APPROVAL
NASA APPROVAL
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT -
COUPLING DATA UNIT ASSY C/M
ECP 0609

CODE IDENT NO.	SIZE	
80230	B	8102743
SCALE —		SHEET 1 OF 1

MIL 10778 D 11-16-64

8102744 B

A-D066452

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

3. MODULE P/N 2007238-061 MAY BE REPLACED BY MODULE P/N 2007238-051.

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	INITIAL RELEASE CLASS A PER TDRR 34523		7 SEPT 67	27 JUL 67

	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 3	5	2007238-061	MSA & QUADRATURE REJECTION ASSY (GFP)
	1	1004260-157	NAMEPLATE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— —— DECIMALS +— —— ANGLES +— ——
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN Lemard DATE 13 JUL 67
CHECKED 14 JUL 67
APPROVAL 26 July 67
APPROVAL
NASA APPROVAL
MIT APPROVAL 8-3-67

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT -
COUPLING DATA UNIT ASSY LEM
ECP 0609

CODE IDENT NO. 80230
SIZE B
8102744
SCALE —
SHEET 1 OF 1

MIL 10778 D 11-18-64

8102747 A A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

3. MODULE P/N 2007238-041 MAY BE REPLACED BY MODULE P/N 2007238-031.

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 34523			27 JUL 67

	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 3	5	2007238-041	MSA & QUAD. REJECT ASSY (GFP)
	1	1004260-151	NAME PLATE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DWG NO CONTRACT

DRAWN DATE 26 JUL 67
CHECKED 26 JUL 67
APPROVAL 26 July 67
APPROVAL
NASA APPROVAL
MIT APPROVAL 8-30-67

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
COUPLING DATA UNIT ASSY, LEM
ECP 0603

CODE IDENT NO.	SIZE	
80230	B	8102747

SCALE —
SHEET

MIL 10778-D 11-16-64

8102747

8102748 A1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

3. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 34523		7 SEPT 67	27 JUL 67

SEE NOTE 2

NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	1006750-12	RESISTOR (R140)
1	1006750-64	RESISTOR (R76)
1	1010372-16	DIODE (CR13)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DWG NO　　CONTRACT

DRAWN　　DATE 26 JUL '67

CHECKED R. A. Geisel 26 JUL 67

APPROVAL R E Kraemer 26 July 67

APPROVAL

NASA APPROVAL

MIT APPROVAL 8-30-67

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
MSA & QUADRATURE REJECTION ASSY
CDU ELECTRONICS
ECP. 0609

CODE IDENT NO.	SIZE	
80230	B	8102748
SCALE →		SHEET

MIL 10778-D 11-16-64

8102748

8102749 A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 34557		7 SEPT 67	10 AUG 67

AR	1008937-007	TAPE, PRESSURE SENSITIVE
1	1004260-514	NAMEPLATE
1	1004260-196	NAME PLATE
NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO. CONTRACT
DRAWN J. REPINSKI DATE 2 AUG 67
CHECKED 2 AUG 67
APPROVAL 2 Aug 67
APPROVAL
NASA APPROVAL
MIT APPROVAL 21 Aug 67

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
SIGNAL CONDITIONER ASSEMBLY
LEM, ECP 0624

CODE IDENT NO. 80230
SIZE B
8102749
SCALE —
SHEET 1 OF 1

MIL 10778-D 11-16-64

8102751 | A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

3. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 34716		28 SEPT 67	12 SEP 67

SEE NOTE 2

NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
14	1008940-001	BAND, MARKER
2	1008940-002	BAND, MARKER
1	1008940-003	BAND, MARKER
2	1008937-002	TAPE, ALUMINUM FOIL, ROLL
2	1008937-003	TAPE, ALUMINUM FOIL, ROLL
1	1008937-005	TAPE, ALUMINUM FOIL, ROLL
1	1008937-007	TAPE, ALUMINUM FOIL, ROLL
1	1008936-001	TAPE, LACING 100FT TOT. LG

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN J K Power DATE 11 AUG '67
CHECKED J. Lepinski 11 AUG '67
APPROVAL D Kluge 11 AUG '67
APPROVAL
NASA APPROVAL
MIT APPROVAL 9-25-67

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT, G & N INTERCONNECT
HARNESS GROUP (LEM)
(6014515-031) ECP 0626

CODE IDENT NO. 80230
SIZE B
8102751
SCALE
SHEET

MIL 10778 D 11-16-64

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
3. REFER TO MASTER RETROFIT KIT DRAWING 1021200 FOR PRE- AND POST-MODIFICATION IDENTIFICATION OF AFFECTED HARDWARE.

REVISIONS					
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 35496		25 JAN 69	16 NOV 67

	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2	1	1008940-00	BAND, MARKER
	2	1010811-002	BAND, IDENTIFICATION
	10	1010490-114	SLEEVE, INSULATION, HEAT SHRINK
SEE NOTE 2	10	1010955-002	CONTACT, MALE
	1	2021203	LUG, SOLDER (E11)
	1	MS25036-52	LUG, TERMINAL (E5)
	2	2010769	COVER, CONNECTOR (56P10)
	1	2014670-011	ADAPTER, CONNECTOR
SEE NOTE 2	1	1010929-104	CONNECTOR, PLUG (56P6)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN Cookman DATE 14 Nov 67
CHECKED Rurfoque 14 NOV 67
APPROVAL W Farley 14 NOV 67
APPROVAL 1/10/68
NASA APPROVAL Paul Watson Jan 10, 68
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
G&N INTERCONNECT HARNESS
GROUP (BLK II)(2014567-061)
ECP667

SIZE	CODE IDENT NO.	
B	80230	8102769
SCALE —		SHEET 1 OF 2

MIL 10778-D 11-16-64

8102769 A

REVISIONS				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
A	INITIAL RELEASE CLASS A PER TDRR 35496		25 JAN 68	~~Dm~~ 16NOV67 EA

	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 2	1		TAPE, TEFLON, 1008960-002, 1 IN WIDE, 20 FT LG
	1		TAPE, AL FOIL, 1008937-003, 5 FT LG
	1		TAPE, AL FOIL, 1008937-002, 20 FT LG
	1		TAPE, LACING, 1008936-001, 10 FT LG
SEE NOTE 2	1		TAPE, SHIELDING, 1010989, 10 FT LG.
	1	2021412-002	WIRE
	1	2021412-001	WIRE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Cookman DATE 14 Nov 67
CHECKED Ruzfogue 14 NOV 67
APPROVAL W Farley 14NOV67
APPROVAL 1/4/67
NASA APPROVAL
APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT-
G&N INTERCONNECT HARNESS
GROUP (BLK II)(2014567-061)-
ECP667

CODE IDENT NO. 80230
SIZE B
8102769
SCALE —
SHEET 2 OF 2

MIL 10778 D 11-16-64

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

AA 8104001

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703	SWR		6-29-66	
T		CHANGED PER TDRR 31514	JVR		10/31/66	
U		CHANGED PER TDRR 32349		J.C.	1/17/67	
V		CHANGED PER TDRR 32872			3/11/67	
W		CHANGED PER TDRR 33437			10MAY67	
Y		CHANGED PER TDRR 33807			5JUN67	
Z		CHANGED PER TDRR 33815			21JUN67	
AA		CHANGED PER TDRR 33949				

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TB-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10000	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 A 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-106	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112,110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-107	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-100	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-105	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104079	ECP-109	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104078 0104081 0104054 0104058 0104076 0104080	ECP-102	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-103	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED
APPROVED MIT A. G. METZGER
APPROVED MSC
DATE

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 AA

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

AA 8104001

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	205	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121, 111, 109, 122	AGC GROUP	121, 111, 109, 122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30-31	COMPUTER ASSY	C1 THRU C7 (RAY 16)(RAY 23)(RAY 18)(RAY 19)	0104104	ECP 486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP 474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP 0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP 0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP 0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP 0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G & N 606, G & N 607 AND LEM KITS 3 AND 4	0104120	ECP 0558	6004000-011	8104232	6004000-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		THIS SHEET ADDED PER TDRR 27327			[illegible]	[illegible]
S		CHANGED PER TDRR 29703	[illegible]	[illegible]	6-27-66	P. [illegible]
T		CHANGED PER TDRR 31514	[illegible]	[illegible]	10/31/66	[illegible]
U		CHANGED PER TDRR 32349	J.P.G.	[illegible]	[illegible]	[illegible]
V		CHANGED PER TDRR 32872	[illegible]	[illegible]	3/1/67	[illegible]
W		CHANGED PER TDRR 33437	[illegible]	[illegible]	[illegible] MAY 67	[illegible]
Y		CHANGED PER TDRR 33807	[illegible]	[illegible]	5 JUN 67	[illegible]
Z		CHANGED PER TDRR 33815	[illegible]	[illegible]	[illegible]	[illegible]
AA		CHANGED PER TDRR 33949	[illegible]	[illegible]	[illegible]	[illegible]

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN [illegible] 8 MAR 1966
CHECKED [illegible] 9 MAR 1966
APPROVED
APPROVED [illegible]
APPROVED MIT A. L. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

8104001 AA

AB 1004018

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TB-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-181
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112,110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-187	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104046 0104079	ECP-189	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-183	SEE 1003770	8104095 8104121 8104158	SEE 1003770

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703	SWR		6-29-66	
T		CHANGED PER TDRR 31514	JVR		10/31/66	
U		CHANGED PER TDRR 32349		J.C.	1/17/67	
V		CHANGED PER TDRR 32872				
W		CHANGED PER TDRR 33437			10 MAY 67	
Y		CHANGED PER TDRR 33807				
Z		CHANGED PER TDRR 33815				
AA		CHANGED PER TDRR 33949				
AB		CHANGED PER TDRR 34220			21 Aug 67	

Ⓡ REPLACES REV P WITH CHANGE

NOTES

1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED
APPROVED MIT A. Q. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 AB

AB 8104001

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	285	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121, 111, 109, 122	AGC GROUP	121, 111, 109, 122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A3C-31	COMPUTER ASSY	C1 THRU C7 (RAY 16)(RAY 22)(RAY 18)(RAY 19)	0104104	ECP 486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP 474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP 0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP 0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP 0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP 0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G & N 606, G & N 607 AND LEM KITS 3 AND 4	0104120	ECP 0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE	COMPUTER ASSY	SYSTEM C1 – RAY 16 C2 – RAY 22 C3 – RAY 17 C4 – RAY 18 C5 – RAY 19 C6 – RAY 20 C7 – RAY 23 C8 – RAY 24 C9 – RAY 29 C10 – RAY 25 C11 – RAY 30	0104121	ECP 0518	2003200-041 2003993-011	8104233	2003200-051 2003993-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓡ R		THIS SHEET ADDED PER TDRR 27327			3/22/66	
S		CHANGED PER TDRR 29703			6-4-66	
T		CHANGED PER TDRR 31514				
U		CHANGED PER TDRR 32349		J.C.		
V		CHANGED PER TDRR 32872			3/ /67	
W		CHANGED PER TDRR 33437			10 MAY 67	
Y		CHANGED PER TDRR 33807			5 JUN 67	
Z		CHANGED PER TDRR 33815				
AA		CHANGED PER TDRR 33949				
AB		CHANGED PER TDRR 34220				

Ⓡ THIS SHEET ADDED

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DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED
APPROVED MIT A. … ZGER
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

8104001 AB

AC 8104001

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
REVISIONS						
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703			6-29-66	
T		CHANGED PER TDRR 31514	JVR		10/31/66	
U		CHANGED PER TDRR 32349		J.C.	1/17/67	
V		CHANGED PER TDRR 32872			3/11/67	
W		CHANGED PER TDRR 33437				
Y		CHANGED PER TDRR 33807				
Z		CHANGED PER TDRR 33815				
AA		CHANGED PER TDRR 33949				
AB		CHANGED PER TDRR 34220				
AC		CHANGED PER TDRR 34490				

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.B.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10000	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003404-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-107	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-108	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-105	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 [illegible] 0104079	ECP-109	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003404-011 1003404-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-183	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				

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APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED
APPROVED MIT A. G. METZGER
APPROVED MSC
DATE

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 AC

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	285	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121,111,109,122	AGC GROUP	121,111,109,122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1,C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30-31	COMPUTER ASSY	C1 THRU C7 (RAY 16)(RAY 22)(RAY 18)(RAY 19)	0104104	ECP 486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601,602,603,201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP 474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP 0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP 0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP 0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 16, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP 0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G & N 606, G & N 607 AND LEM KITS 3 AND 4	0104120	ECP 0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE	COMPUTER ASSY	SYSTEM C1 – RAY 16 C2 – RAY 22 C3 – RAY 17 C4 – RAY 18 C5 – RAY 19 C6 – RAY 20 C7 – RAY 23 C8 – RAY 24 C9 – RAY 29 C10 – RAY 25 C11 – RAY 30	0104121	ECP 0518	2003200-041 2003993-011	8104233	2003200-051 2003993-021
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32 & 33	0104123	ECP 0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		THIS SHEET ADDED PER TDRR 27327			[illegible]	
S		CHANGED PER TDRR 29703			6-7-66	
T		CHANGED PER TDRR 31514			10/31/66	
U		CHANGED PER TDRR 32349			[illegible]	
V		CHANGED PER TDRR 32872			[illegible]	
W		CHANGED PER TDRR 33437			[illegible]	
Y		CHANGED PER TDRR 33807			5 JUN 67	
Z		CHANGED PER TDRR 33815			[illegible]	
AA		CHANGED PER TDRR 33949			[illegible]	
AB		CHANGED PER TDRR 34220			[illegible]	
AC		CHANGED PER TDRR 34490			[illegible]	

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED
APPROVED MIT A. C. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

AD 8104001

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703			6-29-66	
T		CHANGED PER TDRR 31514			10/31/66	
U		CHANGED PER TDRR 32349		J.C.	1/17/67	
V		CHANGED PER TDRR 32872				
W		CHANGED PER TDRR 33437				
Y		CHANGED PER TDRR 33807				
Z		CHANGED PER TDRR 33815				
AA		CHANGED PER TDRR 33949				
AB		CHANGED PER TDRR 34220			21 Aug 67	
AC		CHANGED PER TDRR 34490			15 Sept 67	
AD		CHANGED PER TDRR 34459	S.A.	C.D.		

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TB-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112,110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-187	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104046 0104079	ECP-189	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104078 0104081 0104054 0104058 0104076 0104080	ECP-182	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-183	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

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CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED
APPROVED MIT A. G. METZGER
APPROVED MSC
DATE

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 AD

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AD 8104001

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.E.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	SEE 1003770 SEE 1003770	8104153 8104155	SEE 1003770 SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	205	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121, 111, 109, 122	AGC GROUP	121, 111, 109, 122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30-31	COMPUTER ASSY	C1 THRU C7 (RAY 16)(RAY 22)(RAY 18)(RAY 19)	0104104	ECP 486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP 474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP 0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP 0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP 0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP 0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G & N 606, G & N 607 AND LEM KITS 3 AND 4	0104120	ECP 0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE	COMPUTER ASSY	SYSTEM C1 – RAY 16 C2 – RAY 22 C3 – RAY 17 C4 – RAY 18 C5 – RAY 19 C6 – RAY 20 C7 – RAY 23 C8 – RAY 24 C9 – RAY 29 C10 – RAY 25 C11 – RAY 30	0104121	ECP 0518	2003200-041 2003993-011	8104233	2003200-051 2003993-021
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32 & 33	0104123	ECP 0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, 83 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP 545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓡ R		THIS SHEET ADDED PER TDRR 27327				
S		CHANGED PER TDRR 29703			6-29-66	
T		CHANGED PER TDRR 31514				
U		CHANGED PER TDRR 32349				
V		CHANGED PER TDRR 32872			3/11/67	
W		CHANGED PER TDRR 33437				
Y		CHANGED PER TDRR 33807			5 JUN 67	
Z		CHANGED PER TDRR 33815				
AA		CHANGED PER TDRR 33949				
AB		CHANGED PER TDRR 34220				
AC		CHANGED PER TDRR 34490				
AD		CHANGED PER TDRR 34499				

8104001 AD

Ⓡ THIS SHEET ADDED

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CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED
APPROVED MIT A. G. METZGER
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO 8104001
SCALE NONE
SHEET 2 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 AE

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REVAD WITH CHANGE PER TDRR 34596	Da		11/7/67	JSR

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	REF NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10008	1003469 1003540	8104048	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003484-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 109, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-051 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-198	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

Ⓐ REPLACES REV AD WITH CHANGE

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST-COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AE

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8104001 AE

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	Sa		11/7/67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 - 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E.L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	- 1003700-031 1003707-011 1003706-011	8104140	- 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 [illegible]	0104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104208 -	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16)(RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AE

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REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596			11/7/67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003075-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606, G&N 607, AND LEM KITS 3 AND 4	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE	COMPUTER ASSY	SYSTEM C1 - RAY 16 C2 - RAY 22 C3 - RAY 17 C4 - RAY 18 C5 - RAY 19 C6 - RAY 20 C7 - RAY 23 C8 - RAY 24 C9 - RAY 29 C10 - RAY 25 C11 - RAY 30	0104121	ECP-0518	2003200-041 2003993-011	8104233	2003200-051 2003993-021
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, [illegible] 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, 83 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041

8104001 AE

(AE) THIS SHEET ADDED

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LIST OF MATERIALS

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APPLICATION	

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CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R. J. Ayers 26 OCT '67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

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8104001 AF

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. L. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104019	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN EL	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-703	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10000	1003469 1003540	8104040	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003484-011	8104120	1003565-011 1003570-011 1003569-011
9.0	CAN FAILURE DETECT	MAIN DSKY	120 108 117, 112 108, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	[illegible]	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 108, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104067 0104061 0104080 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003651	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

NOTES

1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	Ja		11/7/67	JSR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		

(AE) REPLACES REV AD WITH CHANGE

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MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST-COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AF

8104001 AF

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/7/67	
AF		REVISION STATUS CHANGED	JRK		12-1-67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.L.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	8104074 8104057 8104046 8104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104139 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	8104061 8104059 8104081 8104054 8104058 8104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	8104061 8104059 8104075 8104081 8104054 8104058 8104076 8104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	8104061 8104059 8104054 8104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	8104054 8104058 8104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED EL'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	8104081 8104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 EL'S	NAV DSKY	121, 111, 109 122	8104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	8104077	ECP-285	1003700-031 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	8104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	8104078	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16)(RAY 22)	8104101	ECP R 443 ECP 440, 447	2003200-011	8104209	2003200-021

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

NEXT ASSY | USED ON
APPLICATION

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C HALL 11 MAR '66
APPROVED MIT W. KRYFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AF

NOTICE – [illegible]

REVISIONS							
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596			11/7/67		
AF		REVISED PER TDRR 34682	JRK		12-1-67		

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-406	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606, G&N 607, AND LEM KITS 3 AND 4	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE	COMPUTER ASSY	SYSTEM C1 - RAY 16 C2 - RAY 22 C3 - RAY 17 C4 - RAY 18 C5 - RAY 19 C6 - RAY 20 C7 - RAY 23 C8 - RAY 24 C9 - RAY 29 C10 - RAY 25 C11 - RAY 30	0104121	ECP-0518	2003200-041 2003990-011	8104233	2003200-051 2003993-021
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, 83 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-565	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN 26 OCT '67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

8104001 AG

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	JA		11/7/67	JSR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-6-67		

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RPK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003450	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-5, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-5, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0	VERB-NOUN E/L			0104022	R-10000	1003469-011	8104035	MOD-1
4.1		MAIN PANEL DISPLAY & KEYBOARD	-5, 6, 7			1003459		MOD-2
4.2			8, 20, 9			1003540		MOD-1
4.3		NAV PANEL DISPLAY & KEYBOARD	5, 6, 7, 8, 20, 9			1003458 1003524		MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-5	0104026	ECP-9	1003400-1	8104030	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003460	8104046	1003700-011
7.0	CONVERT AGC 20 TO AGC 107			0104033	R-10000		8104048	
7.1		COMPUTER ASS'Y	20			1003469		1003700-011
7.2		MAIN DSKY	20			1003540		1003553-011
8.0	UPDATE AGC 117 & 112			0104080	ECP-190		8104120	
8.1		COMPUTER ASS'Y	117, 112			1003700-011		1003565-011
8.2		NAV. DSKY	117, 112			1003551		1003570-011
8.3		MAIN DSKY	117, 112			1003404-011		1003560-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 108, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003560-021 1003540 1003569-011 1003707-031 1003570-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104086	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104088, 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0	REPLACE DECODE MODULES				ECP-186			
12.1		MAIN DSKY	117, 112	0104059		1003404-011	8104118	1003569-011
12.2		NAV DSKY	117, 112	0104058		1003561	8104121	1003570-011
13.0	UPDATE AGC 120			0104062	ECP-223		8104090	
13.1		COMPUTER ASS'Y	120			1003700-011		1003566-031
13.2		NAV DSKY	120			1003551		1003570-021
13.3		MAIN DSKY	120			1003404-011		1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-190	1003565-011	8104089	1003566-001
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104081	ECP-171	1003700-031 1003700-021	[illegible]	1003700-031 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0	L.M. A-37 + DSKY				ECP-111			
18.1		COMPUTER	120 117, 112	0104046 0104057		1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104061 0104080		1003404-011 1003404-011	8104096 8104118	1003569-021 1003569-011
18.3		NAV DSKY	120 117, 112	0104054 0104088		1003551 1003561	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-186	1003700-011	8104117	1003565-011

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ⒶⒺ REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYEER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AG

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 AG

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SOU		11/7/67	
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.L.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-180	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 - 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104086 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-081 1003707-031 1003570-021 1003570-011 1003706-031 1003706-081
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104086 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-081 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104086 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-232	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-205	- 1003700-081 1003707-011 1003706-011	8104140	- 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-206	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104200	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021

8104001 AG

Ⓐⓔ REPLACES REV AD WITH CHANGE

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INSTRUMENTATION LAB
CAMBRIDGE, MASS.

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CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYBER 22 MAR '66
APPROVED MSC A.C. METZGER
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

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REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596			11/7/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-4-67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31.	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19	0104104	ECP-405	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	[illegible]	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	[illegible]	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	[illegible]	2003076-011	[illegible]	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606, G&N 607, AND LEM KITS 3 AND 4	0104120	[illegible]	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE	COMPUTER ASSY	SYSTEM C1 - RAY 16 C2 - RAY 22 C3 - RAY 17 C4 - RAY 18 C5 - RAY 19 C6 - RAY 20 C7 - RAY 23 C8 - RAY 24 C9 - RAY 29 C10 - RAY 25 C11 - RAY 30	0104121	ECP-0610	2003200-041 2003990-011	8104233	2003200-051 2003990-021
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-546	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET - 1	0104129	ECP-0559	2021106-021	8104244	2021106-031

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R. J. 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 AH

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	JA		11/7/67	JSR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-6-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RPK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003450	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	6	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10000	1003469 1003540	8104040	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104050	ECP-190	1003700-011 1003551 1003404-011	8104120	1003565-011 1003570-011 1003560-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-001 1003570-001	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104056	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104050 0104058	ECP-186	1003404-011 1003551	8104118 8104121	1003560-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003404-011	8104090	1003566-031 1003570-021 1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-190	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	120 121, 111	0104061	ECP-[illegible]	1003700-011 1003700-021	[illegible]	1003700-031 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1	L.M. A-37 + DSKY	COMPUTER	120 117, 112	0104046 0104057	ECP-111	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104051 0104050		1003404-011 1003404-011	8104096 8104118	1003560-021 1003560-011
18.3		NAV DSKY	120 117, 112	0104054 0104058		1003551 1003551	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

NOTES.
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 8 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AH

NOTICE - [illegible]

8104001 AH

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-100	1003700-011 1003700-021 1003700-041 1003700-081	8104141 8104139 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	 MAIN DSKY NAV DSKY	 120 117, 112 121, 111, 100 122 120 117, 112 121, 111, 100 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	 1003404-011 1003404-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104086 8104118 8104154 8104095 8104121 8104157	 1003569-021 1003569-011 1003707-081 1003707-031 1003570-021 1003570-011 1003706-081 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	 MAIN DSKY NAV DSKY	 120 117, 112 121, 111, 100 122 110 120 117, 112 121, 111, 100 122 110	0104061 0104060 0104075 0104081 0104054 0104060 0104076 0104080	ECP-102	 1003404-011 1003404-011 1003707-011 1003707-021 1003707-011 1003561 1003551 1003706-011 1003706-021 1003706-011	8104086 8104118 8104143 8104150 8104095 8104121 8104142 8104160	 1003569-021 1003569-011 1003707-081 1003707-081 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	 MAIN DSKY NAV DSKY	 120 117, 112 120 117, 112	 0104061 0104059 0104054 0104058	ECP-196	 1003404-011 1003404-001 1003551 1003561	 8104086 8104118 8104095 8104121	 1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 100 122	0104054 0104058 0104080	ECP-183	1003561 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-081
26.0 26.1 26.2	IMPROVED E.L.'S	 MAIN DSKY NAV DSKY	 121, 111, 100 121, 111, 100	 0104081 0104080	ECP-207	 1003707-011 1003706-011	 8104153 8104155	 1003707-031 1003706-081
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 100 122	0104080	ECP-292	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	 COMPUTER ASS'Y MAIN DSKY NAV DSKY	 110 110 110	0104077	ECP-285	 1003700-081 1003707-011 1003706-011	8104140	 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 100, 122	 COMPUTER ASS'Y MAIN DSKY NAV DSKY	 121, 111 100, 122 121, 111, 100 122 121, 111, 100 122	0104082	ECP-295	 1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-061 1003707-081 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	 COMPUTER ASS'Y MAIN DSKY NAV DSKY	 110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104208	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/7/67	
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK			

(AE) REPLACES REV AD WITH CHANGE

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NEXT ASSY	USED ON

APPLICATION

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CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AH

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8104001 AH

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596	JR		11/7/67	TSN
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-6-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR, S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	1003563-061 1003563-081 1003707-031 1003706-081	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606, C&P 607, AND LEM KITS 3 AND 4	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE	COMPUTER ASSY	SYSTEM C1 - RAY 16 C2 - RAY 22 C3 - RAY 17 C4 - RAY 18 C5 - RAY 19 C6 - RAY 20 C7 - RAY 23 C8 - RAY 24 C9 - RAY 29 C10 - RAY 25 C11 - RAY 30	0104121	ECP-0610	2003200-041 2003990-011	8104233	2003200-051 2003993-021
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-546	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B5 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051

8104001 AH

(AE) THIS SHEET ADDED

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TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN R J Avery 24 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

NOTICE - [illegible]

AJ 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-6, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003106	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003106	8104000	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-6, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104030	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	[illegible]	8104006	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10000	[illegible] [illegible]	8104040	1003700-011 1003550-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV DSKY MAIN DSKY	117, 112 117, 112 117, 112	[illegible]	ECP-190	1003700-011 1003551 1003404-011	8104120	1003565-011 1003570-011 1003560-021
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	[illegible] 1003540 1003569-011 1003707-001 [illegible]	8104088	[illegible] 1003561-011 1003564-021 [illegible] [illegible]
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 100	0104056	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	[illegible] 0104057	ECP-138	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104050 0104058	ECP-186	1003404-011 1003661	8104118 8104121	1003560-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-228	1003700-011 1003551 1003404-011	8104090	1003560-031 1003570-021 1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	[illegible]	ECP-190	1003565-011	[illegible]	[illegible]
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	120 121, 111	[illegible]	ECP-171	[illegible] 1003700-021	[illegible]	[illegible] 1003700-081
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1	L.M. A-37 + DSKY	COMPUTER	120 117, 112	0104046 0104057	ECP-111	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104061 [illegible]		1003404-011 1003404-011	8104086 8104118	1003560-021 1003560-011
18.3		NAV DSKY	120 117, 112	0104064 [illegible]		1003551 1003551	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	[illegible] 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-186	1003700-011	8104117	1003565-011

NOTES.

1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	JA		11/7/67	TJR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-6-67		
AH		REVISION STATUS CHANGED	JRK		19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYEER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AJ

8104001 AJ

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104074 0104057 0104046 0104079	ECP-100	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104129 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 120 117, 112 121, 111, 100 122	0104081 0104050 0104081 0104054 0104058 0104080	ECP-104	1003404-011 1003404-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104086 8104118 8104154 8104086 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 110 120 117, 112 121, 111, 100 122 110	0104081 0104080 0104075 0104081 0104054 0104080 0104076 0104080	ECP-102	1003404-011 1003404-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104086 8104118 8104143 8104150 8104095 8104121 8104142 8104100	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104081 0104050 0104064 0104050	ECP-196	1003404-011 1003404-011 1003551 1003551	8104086 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 100 122	0104054 0104058 0104080	ECP-180	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104150	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 100 121, 111, 100	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104156	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 100 122	0104080	ECP-232	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-305	1003700-031 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 100, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 100, 122 121, 111, 100 122 121, 111, 100 122	0104082	ECP-306	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104090	ECP-412	1003565-021 1003576-011 1003577-011	8104200	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECP'S 443 ECP 446, 447	2003200-011	8104200	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SQ		11/7/67		
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-4-67		
AH		REVISION STATUS CHANGED	JRK		19 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		

Ⓐ REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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APPLICATION	

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FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C HALL 11 MAR '66
APPROVED MIT W. KRYDER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AJ

AJ 8104001

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596			11/17/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-6-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67	

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104108	ECP-406	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-[illegible]	1003563-051 1003563-081 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-091 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-[illegible]	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 46 THRU 47, 50 THRU 53	0104119	ECP-[illegible]	2003076-011	8104220	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606, G&N 607, AND LEM KITS 3 AND 4	0104120	ECP-0558	0004000-011	8104232	0004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 25 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003998-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 30	0104123	ECP-[illegible]	2003950-011 2003949-011	8104234	2003950-021 2003949-021
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-[illegible]	2021104-011 2021104-021 2021104-031	8104237	2021104-051 2021104-061 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15, 16, 17, & 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET 4	0104129	ECP-0559	202106-021	8104244	202106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051

8104001 AJ

(AE) THIS SHEET ADDED

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RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R. Jones 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

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SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/7/67		
AF		REVISION STATUS CHANGED	JRK		12-1-67		
Ⓜ AG		REVISION STATUS CHANGED	JRK		12-6-67		
Ⓜ AH		REVISION STATUS CHANGED			19 DEC 67		
Ⓜ AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
AK		REVISION STATUS CHANGED	LK		6 FEB 68		

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 6 TO AGC 108	COMPUTER ASS'Y	6	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10000	1003469 1003540	8104040	1003700-021 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104080	ECP-190	1003700-011 1003551 1003404-011	8104120	1003565-011 1003570-011 1003560-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-031 1003570-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104066	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104089 0104050	ECP-186	1003404-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003404-011	8104098	1003565-031 1003570-021 1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104064	ECP-150	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	100 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104060 0104054 0104058	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-186	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

NOTES.

1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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INSTRUMENTATION LAB
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MANNED SPACECRAFT CENTER
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DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYEER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

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8104001 AK

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104139 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	- 1003700-031 1003707-011 1003706-011	8104140	- 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-286	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104208	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECP'S 443 ECP 446, 447	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/17/67	TSR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-4-67		
AH		REVISION STATUS CHANGED	JRK		19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
AK		REVISION STATUS CHANGED	LK		6 FEB 68		

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AK

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 AK

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606, G&N 607, AND LEM KITS 3 AND 4	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003998-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15, 16, 17, & 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM [illegible]	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1 - RAY 28 / C3 - RAY 30 D3, D4, D7 & SUB	0104126	ECP-641	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596	SQ	LOE	11/7/67	TSR	
AF		REVISED PER TDRR 34682	JRK	JM	12-1-67		
Ⓝ AG		REVISED PER TDRR 34999	JRK	JM	12-4-67		
Ⓝ AH		REVISED PER TDRR 35222	JRK	JM	19 DEC 67		
Ⓝ AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67		
AK		REVISED PER TDRR 35508	LK		6 FEB 68		

8104001 AK

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R. J. Ayer 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

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8104001 AL

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104020	TD 203	1003463	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10006	1003469 1003540	8104048	1003700-011 1003653-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003404-011	8104120	1003565-011 1003570-011 1003560-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-001 1003570-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 100	0104056	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046. 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003404-011 1003551	8104118 8104121	1003509-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003404-011	8104098	1003565-031 1003570-021 1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-150	1003565-011	8104080	[illegible]
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	[illegible] 121, 111	[illegible]	ECP [illegible]	[illegible] 1003700-0[illegible]	[illegible]	[illegible] 1003700-0[illegible]
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104046 0104057 0104079	ECP-107	1003700-011 1003700-021 1003700-001 1003565-0[illegible]	8104113	1003565-011 1003700-051 1003700-061 1003565-001
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104060 0104054 0104058	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 [illegible] [illegible]	8104097 8104119 8104086 8104118 8104086 8104121	1003595-011 1003565-011 1003500-021 1003509-011 1003570-321 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-1[illegible]	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-186	1003700-011	8104117	1003565-011

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	Sa		11/7/67		
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-6-67		
AH		REVISION STATUS CHANGED	JRK		19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
AK		REVISION STATUS CHANGED	LK		6 FEB 68		
AL		REVISION STATUS CHANGED	RP		22 MAR 68		

Ⓐ REPLACES REV AD WITH CHANGE

NOTES.
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

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CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	K.W. SIMPSON	8 MAR 1966
CHECKED	C. MORRISSEY	9 MAR 1966
APPROVED		
APPROVED	ELDON C. HALL	11 MAR 1966
APPROVED MIT	W. KRYFER	22 MAR 1966
APPROVED MSC	A.C. METZGER	DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AL

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8104001 AL

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.L.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-180	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104139 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-196	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y. MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	1003700-031 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-286	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SG		11/7/67	TSR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
Ⓜ AG		REVISION STATUS CHANGED	JRK		12-6-67		
Ⓜ AH		REVISION STATUS CHANGED	JRK		19 DEC 67		
Ⓜ AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
Ⓜ AK		REVISION STATUS CHANGED	LK		6 FEB 68		
AL		REVISION STATUS CHANGED	RP		22 MAR 68		

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AL

8104001 AL

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR, S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0447	[illegible] 1003563-031 1003707-031 1003706-031	[illegible] 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S.N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606, G&N 607, AND LEM KITS 3 AND 4	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7-RAY 23 C2 - RAY 22 C8-RAY 24 C3 - RAY 17 C9-RAY 29 C4 - RAY 18 C10-RAY 25 C5 - RAY 19 C11-RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003990-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12- RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 30	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602-RAY 9 603-RAY 14 PC4-RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4-RAY 13 C1-RAY 28/ C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596	JR		11/7/67	JSR
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-4-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67	
AK	—	REVISED PER TDRR 35508	LK		6 FEB 68	
AL		REVISED PER TDRR 35841	RP		22 MAR 68	

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

NEXT ASSY | USED ON
APPLICATION

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

8104001 AL

AM 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003450	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003450 1003540 1003458 1003520	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 100	COMPUTER ASS'Y	8	0104029	[illegible]	1003469	8104045	[illegible]
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10000	1003400 1003540	8104048	1003700-011 1003653-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003404-011	8104120	1003565-011 1003570-011 1003560-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003565-021 1003540 1003569-011 1003707-031 1003570-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-190	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104080 0104058	ECP-186	1003404-011 1003551	8104118 8104121	1003589-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003404-011	8104098	1003565-031 1003570-021 1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104066	ECP-150	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	[illegible] 121, 111	[illegible]	[illegible]	[illegible] 1003700-021	[illegible]	[illegible] 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1	L.M. A-37 + DSKY	COMPUTER	120 117, 112	0104046 0104057	ECP-111	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104061 0104080		1003404-011 1003404-011	8104096 8104118	1003560-021 1003589-011
18.3		NAV DSKY	120 117, 112	0104054 0104058		1003551 1003551	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-186	1003700-011	8104117	1003565-011

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	Sa			RRR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-6-67		
AH		REVISION STATUS CHANGED	JRK		19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
AK		REVISION STATUS CHANGED	LK		6 FEB 68		
AL		REVISION STATUS CHANGED	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NOTES

1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NEXT ASSY	USED ON
APPLICATION	

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MANNED SPACECRAFT CENTER
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DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AM

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8104001 AM

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112	0104074	ECP-100	1003700-011	8104141	1003565-011
			121, 111	0104057		1003700-021	8104139	1003700-051
			109, 122	0104046		1003700-041	8104097	1003700-051
			110	0104079		1003700-031		1003565-021
22.0	VIBRATION DAMPENING KEYBOARD			0104061	ECP-184		8104086	
22.1		MAIN DSKY	120	0104059		1003484-011	8104118	1003569-021
			117, 112	0104081		1003484-011	8104154	1003569-011
			121, 111, 100			1003707-011		1003707-031
			122			1003707-021		1003707-031
22.2		NAV DSKY	120	0104054		1003551	8104095	1003570-021
			117, 112	0104058		1003551	8104121	1003570-011
			121, 111, 100	0104080		1003706-011	8104157	1003706-031
			122			1003706-021		1003706-031
23.0	EMI & ICD DSKY REWORK			0104061	ECP-182		8104086	
23.1		MAIN DSKY	120	0104059		1003484-011	8104118	1003569-021
			117, 112	0104075		1003484-011	8104143	1003569-011
			121, 111, 100	0104081		1003707-011	8104159	1003707-031
			122	0104054		1003707-021	8104095	1003707-031
			110	0104058		1003707-011	8104121	1003576-011
23.2		NAV DSKY	120	0104076		1003551	8104142	1003570-021
			117, 112	0104080		1003551	8104160	1003570-011
			121, 111, 100			1003706-011		1003706-031
			122			1003706-021		1003706-031
			110			1003706-011		1003577-011
24.0	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE				ECP-195			
24.1		MAIN DSKY	120	0104061		1003484-011	8104086	1003569-021
			117, 112	0104059		1003484-011	8104118	1003569-011
24.2		NAV DSKY	120	0104054		1003551	8104095	1003570-021
			117, 112	0104058		1003551	8104121	1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120	0104054	ECP-183	1003551	8104095	1003570-021
			117, 112	0104058		1003551	8104121	1003570-011
			121, 111, 100	0104080		1003706-011	8104158	1003706-031
			122			1003706-021		1003706-031
26.0	IMPROVED E.L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 100	0104081		1003707-011	8104153	1003707-031
26.2		NAV DSKY	121, 111, 100	0104080		1003706-011	8104156	1003706-031
27.0	REPLACE 1 X 4 E.L'S	NAV DSKY	121, 111, 100	0104080	ECP-252	1003706-011	8104156	1003706-031
			122			1003706-021		1003706-031
28.0	UPDATE AGC 110			0104077	ECP-306		8104140	
28.1		COMPUTER ASS'Y	110			1003700-031		1003565-021
28.2		MAIN DSKY	110			1003707-011		1003576-011
28.3		NAV DSKY	110			1003706-011		1003577-011
29.0	UPDATE AGC 121, 111, 100, 122			0104082	ECP-288		8104151	
29.1		COMPUTER ASS'Y	121, 111			1003700-021		1003700-051
			100, 122			1003700-041		1003700-051
29.2		MAIN DSKY	121, 111, 100			1003707-011		1003707-031
			122			1003707-021		1003707-031
29.3		NAV DSKY	121, 111, 100			1003706-011		1003706-031
			122			1003706-021		1003706-031
30.0	UPDATE AGC 110			0104078	ECP-412		8104208	
30.1		COMPUTER ASS'Y	110			1003565-021		1003565-041
30.2		MAIN DSKY	110			1003576-011		1003576-021
30.3		NAV DSKY	110			1003577-011		1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECP? 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS						
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AM		REVISED PER TDRR 36021	JJ		8 APR 68	

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INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 4 MAR '66
APPROVED
APPROVED ELDON C HALL 11 MAR '66
APPROVED MIT W. KRYFER 22 MAR '66
APPROVED MSC AC. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AM

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8104001 AM

ITEM NO	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P N MOD (REF)	RFK NO.	NEW P N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-485	2003200-021	8104212	2003200-001
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-081 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-081	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S N 1, 6, 25, 26, 32, 34, 37, 46 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606 - 607	0104120	ECP-0488	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003990-011	8104233	2003200-051 2003993-040
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S N 16, 19, 20, 27, 32, & 33	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-001
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-505	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15, 16, 17, & 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET - 1	0104129	ECP-0559	202106-021	8104244	202106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE - FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1 - RAY 28 / C3 - RAY 20 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596	SR		11/7/67	JSN	
AF		REVISED PER TDRR 34682	JRK		12-1-67		
AG		REVISED PER TDRR 34999	JRK		12-6-67		
AH		REVISED PER TDRR 35222	JRK		19 DEC 67		
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67		
AK		REVISED PER TDRR 35508	LK		6 FEB 68		
AL		REVISED PER TDRR 35841	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		

8104001 AM

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

NEXT ASSY | USED ON
APPLICATION

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.J. 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

8104001 AN

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-6, 6, 7	0104001	R-00001	1003400	8104008	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104000	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-6, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003450 1003540 1003450 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104030	MOD-1 1003400-011
6.0	CONVERT AGC 8 TO AGC 100	COMPUTER ASS'Y	8	0104029	TD-203	1003400	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10000	1003400 1003540	8104040	1003700-011 1003540-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 '117, 112'	0104000	ECP-200	1003700-001 1003551 1003404-011	8104120	1003565-011 1003570-011 1003580-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 117, 112 100, 121, 111, 122, SP1, 120, 120, SP2 110	0104049	ECP-175	1003500-021 1003540 1003569-011 1003707-001 1003070-001	8104088	1003504-011 1003561-011 1003564-021 1003563-001 1003560-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	100, 117, 112, 100	0104056	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	100 117, 112	0104065 0104067	ECP-110	1003700-011 1003700-011	8104097 8104119	1003566-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104050 0104050	ECP-106	1003404-011 1003561	8104118 8104121	1003580-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-220	1003700-011 1003551 1003404-011	8104090	1003565-021 1003570-021 1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104000	ECP-190	1003565-011	8104089	[illegible]
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 100 SPARE S.N 37, 38, 39, 40, 41	0104074 0104057 0104065	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 [illegible]	0104081	ECP-171	1003700-031 [illegible]	8104087	1003700-061 [illegible]
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104065 0104067 0104079	ECP-107	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-87 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104051 0104050 0104064 0104058	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003580-021 1003580-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-108	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-106	1003700-011	8104117	1003566-011

NOTES.
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11 MAR 66	TSR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-6-67		
AH		REVISION STATUS CHANGED			19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
AK		REVISION STATUS CHANGED	LK		6 FEB 68		
AL		REVISION STATUS CHANGED	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		APR 68		
AN		REVISION STATUS CHANGED	JW		3 JUN 68		

(AE) REPLACES REV AD WITH CHANGE

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LIST OF MATERIALS

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TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AN

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104074 0104057 0104046 0104079	ECP-100	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104129 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 120 117, 112 121, 111, 100 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104086 8104118 8104154 8104096 8104121 8104157	1003569-021 1003569-011 1003707-081 1003707-081 1003570-021 1003570-011 1003706-081 1003706-081
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 110 120 117, 112 121, 111, 100 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003561 1003551 1003706-011 1003706-021 1003706-011	8104086 8104118 8104143 8104150 8104096 8104121 8104142 8104160	1003569-021 1003569-011 1003707-081 1003707-081 1003576-011 1003570-021 1003570-011 1003706-031 1003706-081 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 100 120 117, 112	0104061 0104059 0104054 0104058	ECP-196	1003484-011 1003484-011 1003551 1003561	8104086 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	100 117, 112 121, 111, 100 122	0104054 0104058 0104080	ECP-188	1003561 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-081
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 100 121, 111, 100	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-081
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 100 122	0104080	ECP-232	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-406	1003700-031 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 100, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 100, 122 121, 111, 100 122 121, 111, 100	0104082	ECP-408	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 [illegible]	8104151	1003700-051 1003700-051 1003707-081 1003707-031 1003706-081 [illegible]
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 448, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SAU		11/17/67	
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJ		8 APR 68	
AN		REVISION STATUS CHANGED	JW		8 JUN 68	

ⒶⒺ REPLACES REV AD WITH CHANGE

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MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C HALL 11 MAR '66
APPROVED MIT W. KRYDER 22 MAR '66
APPROVED MSC K. METZGER
DATE

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AN

8104001 AN

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19	0104104	ECP-[illegible]	2003200-021	8104212	[illegible]
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	- 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	- 2003100-061 2003100-081 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0401	- [illegible] 1003707-031 1003705-031	8104228 8104229	- [illegible] 1003707-041 1003705-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003705-041	8104230	1003705-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 46 THRU 47, 50 THRU 53	0104119	ECP-0481	2000076-011	8104229	2000076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	[illegible] 606 - 607	0104120	ECP-[illegible]	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 23 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003993-011	8104238	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 38	0104123	ECP-0[illegible]	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B8 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28/ C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	81042[illegible]	2003985-061 2003950-031 2003994-021
46.0	"Y" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C37 - RAY 53	0104132	ECP-719	2003200-051 2003993-081 2003993-041	8104248	2003200-061 2003993-061 2003993-051

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596			11/17/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-4-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
AJ		REVISED PER TDRR 35319			28 DEC 67	
AK		REVISED PER TDRR 35508	LK		6 FEB 68	
AL		REVISED PER TDRR 35841	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		18 APR 68	
AN		REVISED PER TDRR 36273			3 JUN 68	

(AE) THIS SHEET ADDED

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MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R. J. 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	8104001

SCALE NONE SHEET 3 OF 3

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 100	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10000	1003469 1003540	8104040	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104080	ECP-190	1003700-011 1003551 1003404-011	8104120	1003566-011 1003570-011 1003560-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003565-021 1003540 1003569-011 1003707-001 1003570-011	8104088	1003564-011 1003561-011 1003564-021 1003563-001 1003553-001
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 100	0104056	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104065 0104067	ECP-116	1003700-011 1003700-011	8104107 8104119	1003566-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104060 0104058	ECP-106	1003404-011 1003551	8104110 8104121	1003560-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-220	1003700-011 1003551 1003404-011	8104080	1003565-031 1003570-021 1003560-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104060	ECP-150	1003565-011	8104089	1003565-041
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104007	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 [illegible]	0104041	ECP-171	1003700-001 [illegible]	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104067 0104061 0104060 0104054 0104052	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 1003551 1003551	8104097 8104119 8104096 8104110 8104095 8104121	1003566-011 1003565-011 1003560-021 1003560-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

NOTES -

1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	JA		11/67	FBR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-6-67	
AH		REVISION STATUS CHANGED			19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		6 FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJ		8 APR 68	
AN		REVISION STATUS CHANGED	JW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJ		25 JUN 68	

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1968
CHECKED C. MORRISSEY 8 MAR 1968
APPROVED
APPROVED ELDON C. HALL 11 MAR 1968
APPROVED MIT W. KRYFER 22 MAR 1968
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AP

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104074 0104057 0104046 0104079	ECP-180	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 120 117, 112 121, 111, 100 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003404-011 1003404-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104086 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-081 1003707-031 1003570-021 1003570-011 1003706-081 1003706-081
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 110 120 117, 112 121, 111, 100 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003404-011 1003404-011 1003707-011 1003707-021 1003707-0[illegible]1 [illegible] [illegible] 1003706-0[illegible]1 1003706-021 1003706-011	8104096 8104118 8104143 8104150 8104095 8104121 8104142 8104160	1003569-021 1003569-011 [illegible] 1003707-081 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-196	1003404-011 1003404-011 1003551 1003551	8104086 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 100 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-081
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 100 121, 111, 100	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104156	1003707-031 1003706-081
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 100 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-205	1003700-031 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 100, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 100, 122 121, 111, 100 122 121, 111, 100 122	0104082	ECP-206	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 [illegible]	8104151	1003700-051 1003700-051 1003707-081 1003707-031 1003706-081 [illegible]
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECP'R 443 ECP 446, 447, 460, 47	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/7/67		
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-4-67		
AH		REVISION STATUS CHANGED	JRK		67		
AJ		REVISION STATUS CHANGED	J.W.		DEC 67		
AK		REVISION STATUS CHANGED	LK		68		
AL		REVISION STATUS CHANGED	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		
AN		REVISION STATUS CHANGED	JW		3 JUN 68		
AP		REVISION STATUS CHANGED	JJJ		26 JUN 68		

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYDER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

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8104001 AP

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-081 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-081	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0401	1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003708-041	8104230	1003708-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S N 1, 6, 25, 26, 32, 34, 37, 46 THRU 47, 50 THRU 53	0104119	ECP-0401	2003076-011	8104228	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 606 - 607	0104120	ECP-0568	6004080-011	8104232	6004080-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003993-011	8104233	2003200-051 2003993-021
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S N 16, 19, 20, 27, 32, & 33	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-546	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28/ C3-RAY [illegible] D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C57 - RAY 53	0104132	ECP-719	2003200-051 2003993-031 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596			11/17/67	TSR	
AF		REVISED PER TDRR 34682	JRK		12-1-67		
AG		REVISED PER TDRR 34999	JRK		12-6-67		
AH		REVISED PER TDRR 35222	JRK		19 DEC 67		
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67		
AK		REVISED PER TDRR 35508	LK		6 FEB 68		
AL		REVISED PER TDRR 35841	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		
AN		REVISED PER TDRR 36273			3 JUN 68		
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68		

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO	SIZE	DRAWING NO.
80230	D	8104001
SCALE NONE		SHEET 3 OF 3

8104001 A13

8104001 AR

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. L. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003400	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003520	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-5	0104076	ECP-9	1003400-1	8104089	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 100	COMPUTER ASS'Y	8	0104079	TD-703	1003409	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10000	1003469 1003540	8104048	1003700-011 1003550-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 '117,'112'	0104060	ECP-130	1003700-011 1003551- 1003404-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 '117,'112' 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003565-021 1003540 1003565-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003663-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 112, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-134	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003404-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003404-011	8104098	1003566-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-150	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	[illegible]	ECP-111	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104060 0104054 0104058	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	Sa	[illegible]	[illegible] 67	[illegible]	
AF		REVISION STATUS CHANGED	JBK	[illegible]	[illegible]		
AG		REVISION STATUS CHANGED	JPK	[illegible]	[illegible]		
AH		REVISION STATUS CHANGED	[illegible]	[illegible]	19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.	SL	28 DEC 67		
AK		REVISION STATUS CHANGED	LK	[illegible]	6 FEB 68		
AL		REVISION STATUS CHANGED	RP	[illegible]	22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ	[illegible]	1 APR 68		
AN		REVISION STATUS CHANGED	JW	[illegible]	3 JUN 68		
AP		REVISION STATUS CHANGED	JJJ	Y.M.	28 JUN 68		
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68		

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYFER 22 MAR 1966
APPROVED MSC A.C. METZGER

DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AR

8104001 AR

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.L.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-180	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104139 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	IBM & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-196	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104158 8104156	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-232	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-205	- 1003700-061 1003707-011 1003706-011	8104140	- 1003565-031 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104208	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECP 443 ECP 446, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SAU		11/7/67	
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		67	
AJ		REVISION STATUS CHANGED	J.D.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		68	
AL		REVISION STATUS CHANGED	RP		28 MAR 68	
AM		REVISED PER TDRR 36021	JJ		8 APR 68	
AN		REVISION STATUS CHANGED	JW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJ	T.M.	28 JUN 68	
AR		REVISION STATUS CHANGED	JJ		17 JUL 68	

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

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± ± ±
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INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYDER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AR

ITEM NO.	DESCRIPTION	END ITEM	AGC-SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-[illegible]	2003200-021	8104212	[illegible]
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-0[illegible] 2003100-0[illegible] 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-0[illegible]
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-[illegible]	1003563-031 1003707-031 [illegible]	8104228 8104229	1003563-0[illegible] 1003707-041 [illegible]-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-[illegible]	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 28, 32, 38, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	[illegible] 606 - 607	0104120	ECP-[illegible]	6004080-011	8104232	6004080-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 [illegible]-011	8104233	2003200-051 2003993-0[illegible]
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N [illegible], 19, 20, 27, 32, & 33	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -4	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28 / C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C37 - RAY 53	0104132	ECP-719	2003200-051 2003993-051 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17-RAY 50, D31-RAY 64	0104134	ECP-735	2008994-021	8104250	2003994-031

Ⓐ THIS SHEET ADDED

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596	SR		11/7/67	TSR	
AF		REVISED PER TDRR 34682	JRK		12-1-67		
AG		REVISED PER TDRR 34999	JRK		12-6-67		
AH		REVISED PER TDRR 35222	JRK		19 DEC 67		
AJ		REVISED PER TDRR 35319			20 DEC 67		
AK		REVISED PER TDRR 35508	LK		6 FEB 68		
AL		REVISED PER TDRR 35841	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		
AN		REVISED PER TDRR 36273			3 JUN 68		
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68		
AR		REVISED PER TDRR 36457	JJJ	RWH	19 JUL 68		

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± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET

8104001 AR

8104001 AS

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 100	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10000	1003469 1003540	8104048	1003700-021 1003559-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104050	ECP-193	1003700-011 1003551 1003404-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 117, 112 100, 121, 111, 122, SP1, 123, 120, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-001 1003570-001	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 100	0104055	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-134	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104050 0104058	ECP-186	1003404-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104052	ECP-228	1003700-011 1003551 1003484-011	8104098	1003566-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104088	ECP-180	1003565-011	8104089	1003565-021
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	[illegible] 120, 111	[illegible]	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121 111 100, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-061 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104060 0104054 0104058	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 1003561 1003551	8104097 8104119 8104096 8104118 8104096 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-195	1003700-011	8104117	1003565-011

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/7/67	TSR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-6-67		
AH		REVISION STATUS CHANGED			19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
AK		REVISION STATUS CHANGED	LK		6 FEB 68		
AL		REVISION STATUS CHANGED	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJ		8 APR 68		
AN		REVISION STATUS CHANGED	JW		3 JUN 68		
AP		REVISION STATUS CHANGED	JJ		26 JUN 68		
AR		REVISION STATUS CHANGED	JJ	KWH	17 JUL 68		
AS		REVISION STATUS CHANGED	A.N.	CFF	22 JUL 68		

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MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYEER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

8104001 AS

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-180	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104129 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-081 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104150 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-081 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-196	1003484-011 1003484-011 1003551 1003551	8104098 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-188	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-081
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-081
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-232	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-305	1003700-061 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-309	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	1003700-051 1003700-051 1003707-081 1003707-031 1003706-081 [illegible]
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECP'S 443 ECP 446, 447,460,478	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SO		11/7/67	TKR	
AF		REVISION STATUS CHANGED	JRK		12-1-67		
AG		REVISION STATUS CHANGED	JRK		12-4-67		
AH		REVISION STATUS CHANGED	JRK		19 DEC 67		
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67		
AK		REVISION STATUS CHANGED	LK		6 FEB 68		
AL		REVISION STATUS CHANGED	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		
AN		REVISION STATUS CHANGED	JW		3 JUN 68		
AP		REVISION STATUS CHANGED	JJJ	T.M.	25 JUN 68		
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68		
AS		REVISION STATUS CHANGED	J.N.	CFP	22 JUL 68		

AE REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYBER 22 MAR '66
APPROVED MSC K. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AS

8104001 AS

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-406	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-081 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	GRN 606 - 607	0104120	ECP-0550	0004000-011	8104232	0004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7-RAY 23 C2 - RAY 22 C8-RAY 24 C3 - RAY 17 C9-RAY 29 C4 - RAY 18 C10-RAY 25 C5 - RAY 19 C11-RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003993-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12- RAY 26	0104121	ECP-604	2003992-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-546	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM. B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET #6	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602-RAY 9 603-RAY 14 PC4-RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4-RAY 13 C1-RAY 28/ C3-RAY 28 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2-RAY 22 C9-RAY 29 C4-RAY 18 C10-RAY 25 C5-RAY 19 C12-RAY 26 C6-RAY 20 C13-RAY 27 C8-RAY 24 C14-RAY 28 C15-RAY 31 THRU C57-RAY 53	0104132	ECP-719	2003200-051 2003993-031 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17-RAY 50, D31-RAY 64 D18-RAY 51	0104134	ECP-735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596	SR		11/7/67	TSR	
AF		REVISED PER TDRR 34682	JRK		12-1-67		
AG		REVISED PER TDRR 34999	JRK		12-6-67		
AH		REVISED PER TDRR 35222	JRK		19 DEC 67		
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67		
AK		REVISED PER TDRR 35508	LK		6 FEB 68		
AL		REVISED PER TDRR 35841	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		
AN		REVISED PER TDRR 36273			3 JUN 68		
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68		
AR		REVISED PER TDRR 36457	JJJ	RWH	17 JUL 68		
AS		REVISED PER TDRR 36484	A.N.	CH	22 JUL 68		

Ⓐⓔ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R. J. Ayer 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

8104001 AS

8104001 AT

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596				
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK			
AH		REVISION STATUS CHANGED			19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
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AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISION STATUS CHANGED			3 JUN 68	
AP		REVISION STATUS CHANGED	JJJ		25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	KWH	17 JUL 68	
AS		REVISION STATUS CHANGED	A.N.		22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	P. L. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E.L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003528	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASSY	8	0104021	TD-203	1003400	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC [illegible]	COMPUTER ASSY MAIN DSKY	- 20 20	[illegible]	R-10000	1003400 1003540	[illegible]	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASSY NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104080	ECP-[illegible]	1003700-011 1003551 1003400-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 108, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	[illegible] 1003540 1003565-011 1003707-031 1003576-011	8104038	[illegible] 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASSY NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104056	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-21?	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1	L.M. A-37 + DSKY	COMPUTER	120 117, 112	0104046 0104057	ECP-111	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104061 0104080		1003484-011 1003484-011	8104096 8104118	1003569-021 1003569-011
18.3		NAV DSKY	120 117, 112	0104054 0104058		1003551 1003551	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf ±
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KRYFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST - COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 3

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

8104001 AT

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.L.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	IF P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-081 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 120, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-232	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	1003700-081 1003707-011 1003706-011	8104140	1003565-081 1003576-081 1003577-081
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 120 121, 111, 109 122	0104082	[illegible]	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	1003700-081 1003700-061 1003707-081 1003707-031 1003706-031 [illegible]
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	[illegible]	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 26) (RAY 22)	0104181	ECP? 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/7/67	SSR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4 67	
AH		REVISION STATUS CHANGED	JRK		15 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJ		8 APR 68	
AN		REVISION STATUS CHANGED	GW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJ	I.M.	28 JUN 68	
AR		REVISION STATUS CHANGED	JJ	RWH	19 JUL 68	
AS		REVISION STATUS CHANGED	N.	CJP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJ		8 AUG 68	

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KRYFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 3

8104001 AT

8104001 AT

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	- 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	- 2003100-081 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	- 1003563-031 1003707-031 1003706-031	8104228 8104229	- 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	GBN 605 - 607	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003990-011	8104233	2003200-051 2003993-040
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 15, 19, 20, 27, 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003960-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET - 1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28 / C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950 031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C57 - RAY 53	0104132	ECP-719	2003200-051 2003993-051 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104138	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17 - RAY 50, D31 - RAY 64 D18 - RAY 51 D15 - RAY 48 (CM 103) D25 - RAY 58	0104134	ECP-735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596	SR		11/9/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-6-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
AJ		REVISED PER TDRR 35319			28 DEC 67	
AK		REVISED PER TDRR 35508	LK		6 FEB 68	
AL		REVISED PER TDRR 35841	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISED PER TDRR 36273	JW		3 JUN 68	
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68	
AR		REVISED PER TDRR 36457	JJJ	RWH	19 JUL 68	
AS		REVISED PER TDRR 36484	A.N.	CJP	22 JUL 68	
AT		REVISED PER TDRR 36594	JJJ		8 AUG 68	

(AE) THIS SHEET ADDED

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± ± ±
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MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 3

8104001 AT

8104001 AU

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	JA		11/7/67	TJR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-6-67	
AH		REVISION STATUS CHANGED			19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		6 FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJ		APR 68	
AN		REVISION STATUS CHANGED	JW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJ		28 JUN 68	
AR		REVISION STATUS CHANGED	JJ	RWH	17 JUL 68	
AS		REVISION STATUS CHANGED	A.N.	CJP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJ	RWH	9 AUG 68	

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RPK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-6, 6, 7	0104001	R-00001	1003450	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104010	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-6, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003450 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 100	COMPUTER ASS'Y	8	0104079	TD-703	1003409	8104045	[illegible]
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104030	R-10008	1003400 1003540	8104040	1003700-011 1003850-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104000	ECP-130	1003700-011 1003551 1003404-011	8104120	1003565-011 1003570-011 1003860-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 100 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 130	0104049	ECP-175	1003700-021 1003540 1003569-011 1003707-011 1003670-011	8104088	1003564-011 1003561-011 1003564-021 1003863-001 1003863-001
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 100	[illegible]	ECP-197	1003700-011	8104117	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	100 117, 112	[illegible] 0104067	ECP-110	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104030 0104030	ECP-186	1003404-011 1003661	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104052	ECP-223	1003700-011 1003551 1003404-011	8104090	1003564-031 1003570-021 1003563-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104000	ECP-180	1003865-011	8104080	[illegible]
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110, SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104005	ECP-212	1003113-011	8104114 8104119 8104007	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	[illegible] 121, 111	[illegible]	ECP-17[illegible]	1003700-0[illegible] 1003700-021	8104083	1003700-051 1003700-061
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	100, 117, 112 121, 111 100, 122 110	0104006 0104067 0104079	ECP-187	1003700-011 1003700-021 1003700-0[illegible] 1003565-021	8104113	1003565-011 1003700-061 1003700-051 1003565-041
18.0 18.1	L.M. A-87 + DSKY	COMPUTER	120 117, 112	0104046 0104067	ECP-111	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104081 0104080		1003404-011 1003404-011	8104086 8104100	1003560-021 1003560-011
18.3		NAV DSKY	120 117, 112	0104054 0104088		1003551 1003601	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-180	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104067	ECP-186	1003700-011	8104117	1003565-011

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR 1966
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APPROVED
APPROVED ELDON C. HALL 17 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 4

8104001 AU

8104001 AU

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RPK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	8104074 8104057 8104046 8104079	ECP-100	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104129 8104097	1003565-011 1003700-051 1003700-061 1003565-021
22.0 22.1	VIBRATION DAMPENING KEYBOARD	MAIN DSKY	120 117, 112 121, 111, 100 122	8104061 8104059 8104081	ECP-104	1003404-011 1003404-011 1003707-011 1003707-021	8104086 8104118 8104154	1003569-021 1003569-011 1003707-081 1003707-031
22.2		NAV DSKY	120 117, 112 121, 111, 100 122	8104094 8104058 8104080		1003551 1003551 1003706-011 1003706-021	8104096 8104121 8104157	1003570-021 1003570-011 1003706-081 1003706-031
23.0 23.1	EMI & ICD DSKY REWORK	MAIN DSKY	120 117, 112 121, 111, 100 122 110	8104061 8104080 8104075 8104081 8104054	ECP-102	1003404-011 1003404-011 1003707-011 1003707-021 1003707-011	8104086 8104118 8104143 8104130 8104095	1003569-021 1003569-011 1003707-081 1003707-081 1003576-011
23.2		NAV DSKY	120 117, 112 121, 111, 100 122 110	8104088 8104076 8104080		1003551 1003551 1003706-011 1003706-021 1003706-011	8104121 8104142 8104100	1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY	120 117, 112	8104061 8104069	ECP-105	1003404-011 1003404-011	8104086 8104118	1003569-021 1003569-011
24.2		NAV DSKY	120 117, 112	8104064 8104068		1003551 1003551	8104096 [illegible]	1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 100 122	8104054 8104058 8104080	ECP-108	1003551 1003551 1003706-011 1003706-021	8104096 8104121 8104120	1003570-021 1003570-011 [illegible] 1003706-081
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 100 121, 111, 100	8104081 8104080	ECP-207	1003707-011 1003706-011	8104130 8104136	1003707-081 1003706-081
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 100 122	8104080	ECP-232	1003706-011 1003706-021	8104136	1003706-081 1003706-081
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	8104077	ECP-265	1003700-081 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 100, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 100, 122 121, 111, 100 122 121, 111, 100 122	8104082	ECP-286	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 [illegible]	8104151	1003700-051 1003700-051 1003707-081 1003707-031 1003706-081 [illegible]
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	8104090	ECP-312	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003677-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 20)	8104181	ECP'R 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

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Ⓜ AH		REVISION STATUS CHANGED	JRK		67	
Ⓜ AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
Ⓜ AK		REVISION STATUS CHANGED	LK		68	
Ⓜ AL		REVISION STATUS CHANGED	RP		22 MAR 68	
Ⓜ AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
Ⓜ AN		REVISION STATUS CHANGED	JW		8 JUN 68	
Ⓟ AP		REVISION STATUS CHANGED	JJJ	T.M.	26 JUN 68	
AR		REVISION STATUS CHANGED	JJJ		17 JUL 68	
Ⓜ AS		REVISION STATUS CHANGED	T.N.	CJP	22 JUL 68	
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AU		REVISED PER TDRR 36652	JJJ		9 AUG 68	

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G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
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SHEET 2 OF 4

8104001 AU

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 AU

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19	0104104	ECP-405	2003200-021	8104212	[illegible]
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	- 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	- 2003100-061 2003100-081 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1&SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	- 1003563-041 1003707-031 1003706-031	8104228 8104229	- 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 46 THRU 47, 50 THRU 58	0104119	ECP-0481	2003076-011	8104228	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	[illegible] - 007	0104120	ECP-[illegible]	[illegible]-011	8104232	[illegible]-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7-RAY 23 C2 - RAY 22 C8-RAY 24 C3 - RAY 17 C9 - RAY 25 C4 - RAY 18 C10- RAY 28 C5 - RAY 19 C11-RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003990-011	8104233	2003200-051 2003990-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12- RAY 26	0104121	ECP-604	2003992-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 38	[illegible]	ECP-[illegible]	2003950-011 2003949-011	8104234	2003950-021 2003949-021
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET 4	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602-RAY 9 603-RAY 14 PC4-RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4-RAY 13 C1-RAY 28/ C3-RAY [illegible] D3, D4, D7 & SU13	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2-RAY 22 C9-RAY 29 C4-RAY 18 C10-RAY 25 C5-RAY 19 C12-RAY 26 C6-RAY 20 C13-RAY 27 C8-RAY 24 C14-RAY 28 C15-RAY 31 THRU C37-RAY 53	0104132	ECP-719	2003200-051 2003993-031 2003998-041	8104248	2003200-061 2003993-061 2003998-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17-RAY 50, D31-RAY 64 D18-RAY 51 D15-RAY 48 (CM 103) D25-RAY 58	0104134	ECP-735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596			11/17/67		
AF		REVISED PER TDRR 34682	JRK		12-1-67		
AG		REVISED PER TDRR 34999	JRK		12-6-67		
AH		REVISED PER TDRR 35222	JRK		19 DEC 67		
AJ		REVISED PER TDRR 35319			20 DEC 67		
AK		REVISED PER TDRR 35508	LK		6 FEB 68		
AL		REVISED PER TDRR 35841	RP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		
AN		REVISED PER TDRR 36273			3 JUN 68		
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68		
AR		REVISED PER TDRR 36457	JJJ	RWH	17 JUL 68		
AS		REVISED PER TDRR 36484	A.N.	CJP	22 JUL 68		
AT		REVISED PER TDRR 36594	JJJ		8 AUG 68		
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68		

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 31 MAR 1966
APPROVED MSC A C METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 4

8104001 AU

REVISIONS					
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	AU	THIS SHEET ADDED PER TDRR 36652		9 AUG 68	JJJ / RWH

ITEM NO.	DESCRIPTION	END/ITEM	AGC - S/N	R.I.B NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
49.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	RAY 4 SYS 600 A, RAY 5 SYS 600B, RAY 6 SYS 600C, RAY 7 SYS 600D, RAY 13 SYS 602, RAY 16 SYS 200, RAY 19 SYS SP-1, RAY 20 SYS C2, RAY 28 SYS C14, RAY 30 SYS C11, RAY 27 SYS C-1, RAY 33 SYS LINK, RAY 32, RAY 34 SYS D1, RAY 36 SYS D3, RAY 38 SYS D5, RAY 40 SYS D7, RAY 41 THRU 47 SYS D8 THRU D14, RAY 48 SYS D16, RAY 52 THRU RAY 57 SYS D18 THRU D24, RAY 59 THRU RAY 63 SYS D26 THRU D30, RAY 65 THRU 91 SYS D32 THRU D58	0104135	ECP - 735	2003985-021X 2003985-06 2003950-011 2003950-02 2003994-011 2003994-021	8104251	2003985-071X 2003985-081 2003950-041 2003950-05 2003994-041 2003994-051 2003950-06

(AU) THIS SHEET ADDED

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±
3 PLACE DECIMALS ±
ANGLES ±
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MATERIAL
APPROVAL

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN J. Sammarco DATE 8 AUG 68
CHECKED Dorbrowski 9 AUG 68
APPROVAL ELDON C. HALL
CONTRACT
NASA APPROVAL A C METZGER 22 MAR 66
MIT APPROVAL W. KUPFER

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

SIZE D
CODE IDENT NO. 80230
8104001
SCALE NONE
SHEET 4 OF 4

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AV 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003469	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003407-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003400	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104030	R-10000	1003400 1003540	8104040	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003404-011	8104120	1003566-011 1003570-011 1003660-011
9.0	G/N FAILURE DETECT	MAIN DSKY	120 108 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003565-021 1003540 1003565-011 1003707-031 1003570-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104066 0104067	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003404-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003404-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-150	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 [illegible]	0104041	ECP-171	1003700-031 1003700-091	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	0104046 0104057 0104079	ECP-107	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY.	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104060 0104054 0104056	ECP-111	1003700-011 1003700-011 1003404-011 1003404-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-180	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596				
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-6-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		6 FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISION STATUS CHANGED	JW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJJ		28 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	KWH	17 JUL 68	
AS		REVISION STATUS CHANGED	AN		22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	

(AE) REPLACES REV AD WITH CHANGE

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 1

8104001 AV

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ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 100, 122 110	8104074 8104057 8104046 8104079	ECP-100	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 120 117, 112 121, 111, 100 122	8104061 8104059 8104081 8104054 8104058 8104080	ECP-104	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104086 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-081 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 100 122 110 120 117, 112 121, 111, 100 122 110	8104061 8104059 8104075 8104081 8104054 8104058 8104076 8104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104086 8104118 8104143 8104150 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-081 1003707-081 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	8104061 8104059 8104054 8104058	ECP-186	1003484-011 1003484-011 1003551 1003551	8104086 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 100 122	8104054 8104058 8104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-081
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 100 121, 111, 100	8104081 8104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-081
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 100 122	8104080	ECP-232	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	8104077	ECP-205	1003700-031 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 100, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 100, 122 121, 111, 100 122 121, 111, 100 122	8104082	ECP-206	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 [illegible]	8104151	1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	8104078	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	8104109	ECP? 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	[illegible]		11/7/67	TER
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
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AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
AS		REVISION STATUS CHANGED	T.N.	CHP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	

8104001 AV

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DO NOT SCALE THIS DRAWING

MATERIAL

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CAMBRIDGE MASS

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CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KUPFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 4

8104001 AV

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULE, A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-[illegible]	2003200-021	8104212	2003200-[illegible]
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-0[illegible] 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-031	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	[illegible] 1003707-031 1003706-031	8104228 8104229	[illegible] 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 46 THRU 47, 50 THRU 53	0104119	ECP-0401	2003076-011	8104228	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	[illegible] 606 - 607	0104120	ECP-0600	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003993-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 38	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-546	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15, 16, 17, & 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET - 1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28 / C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C37 - RAY 53	0104132	ECP - 719	2003200-051 2003993-051 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP - 704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17 - RAY 50, D31 - RAY 64 D18 - RAY 51 D15 - RAY 48 (CM 103) D25 - RAY 58	0104134	ECP - 735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
AE		THIS SHEET ADDED PER TDRR 34596			11/7/67		
AF		REVISED PER TDRR 34682	JRK		12-1-67		
AG		REVISED PER TDRR 34999	JRK		12-4-67		
AH		REVISED PER TDRR 35222	JRK		19 DEC 67		
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67		
AK		REVISED PER TDRR 35508	LK		6 FEB 68		
AL		REVISED PER TDRR 35841	EP		22 MAR 68		
AM		REVISED PER TDRR 36021	JJJ		8 APR 68		
AN		REVISED PER TDRR 36273			3 JUN 68		
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68		
AR		REVISED PER TDRR 36457	JJJ	RWH	19 JUL 68		
AS		REVISED PER TDRR 36484	A.N.	C.J.P.	22 JUL 68		
AT		REVISED PER TDRR 36594	JJJ		8 AUG 68		
AU		REVISED PER TDRR 36652	JJJ	KWU	9 AUG 68		
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68		

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO	SIZE	DRAWING NO.
80230	D	8104001

SCALE NONE SHEET 3 OF 4

8104001 AV

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END/ITEM	AGC - S/N	R.I.B NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
49.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	RAY 4 SYS 600 A, RAY 5 SYS 600 B, RAY 6 SYS 600C, RAY 7 SYS 600D, RAY 13 SYS 602, RAY 16 SYS 200, RAY 19 SYS SP-1, RAY 20 SYS C2, RAY 28 SYS C14, RAY 30 SYS C11, RAY 27 SYS C-1, RAY 33 SYS LINK, RAY 32, RAY 34 SYS D1, RAY 36 SYS D3, RAY 38 SYS D5, RAY 40 SYS D7, RAY 41 THRU 47 SYS D8 THRU D14, RAY 49 SYS D16, RAY 52 THRU RAY 57 SYS D19 THRU D24, RAY 59 THRU RAY 63 SYS D26 THRU D30, RAY 68 THRU 81 SYS D32 THRU D58	0104135	ECP - 735	2003985-021X 2003985-061 2003950-021 2003950-021X 2003994-011 2003994-021	8104251	2003985-071X 2003985-081 2003950-051 2003950-051X 2003994-041 2003994-051 2003950-061

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	AU	THIS SHEET ADDED PER TDRR 36652		AUG 68	RWH
	AV	REVISED PER TDRR 36878		1 OCT 68	

Ⓐ︎ THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
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2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
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APPROVAL

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN DATE 8 AUG 66
CHECKED 9 AUG 66
APPROVAL ELDON C. HALL
CONTRACT
NASA APPROVAL A C METZGER 22 MAR 66
MIT APPROVAL W. KUPFER

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

SIZE D
CODE IDENT NO. 80230
8104001
SCALE NONE
SHEET 4 OF 4

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8104001 AW

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10008	1003469 1003540	8104048	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003484-011	8104120	100356[illegible]-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596			1/11/67	
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		6 FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISION STATUS CHANGED			3 JUN 68	
AP		REVISION STATUS CHANGED	JJJ		25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
AS		REVISION STATUS CHANGED	A.N.		22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36052	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	

(AE) REPLACES REV AD WITH CHANGE

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
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CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 4

8104001 AW

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ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104139 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	- 1003700-031 1003707-011 1003706-011	8104140	- 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104208	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS

	SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
	AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SCW		11/7/67	JGR
	AF		REVISION STATUS CHANGED	JRK		12-1-67	
ⓜ	AG		REVISION STATUS CHANGED	JRK		12-4-67	
ⓜ	AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
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ⓜ	AL		REVISION STATUS CHANGED	RP		22 MAR 68	
ⓜ	AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
ⓜ	AN		REVISION STATUS CHANGED	JW		3 JUN 68	
ⓜ	AP		REVISION STATUS CHANGED	JJJ	Y.M.	25 JUN 68	
	AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
ⓜ	AS		REVISION STATUS CHANGED	J.N.	CJP	22 JUL 68	
	AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
ⓜ	AU		REVISED PER TDRR 36652	JJJ		9 AUG 68	
ⓜ	AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
	AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	

ⒶⒺ REPLACES REV AD WITH CHANGE

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NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KUPFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	- 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	- 2003100-081 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	- 1003563-031 1003707-031 1003706-031	8104228 8104229	- 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 605 - 607	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7-RAY 23 C2 - RAY 22 C8-RAY 24 C3 - RAY 17 C9-RAY 29 C4 - RAY 18 C10-RAY 25 C5 - RAY 19 C11-RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003998-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12- RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602-RAY 9 603-RAY 14 PC4-RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4-RAY 13 C1-RAY 28/ C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2-RAY 22 C9-RAY 29 C4-RAY 18 C10-RAY 25 C5-RAY 19 C12-RAY 26 C6-RAY 20 C13-RAY 27 C8-RAY 24 C14-RAY 28 C15-RAY 31 THRU C37-RAY 53	0104132	ECP-719	2003200-051 2003993-031 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17-RAY 50, D31-RAY 64, D18-RAY 51 D15-RAY 48 (CM 103) D25-RAY 58	0104134	ECP-735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596			11/7/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-4-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67	
AK		REVISED PER TDRR 35508	LK		6 FEB 68	
AL		REVISED PER TDRR 35841	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISED PER TDRR 36273			3 JUN 68	
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68	
AR		REVISED PER TDRR 36457	JJJ	RWH	17 JUL 68	
AS		REVISED PER TDRR 36484	A.N.	CJP	22 JUL 68	
AT		REVISED PER TDRR 36594	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		[illegible] 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R. Ayers 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A C METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 4

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

ITEM NO.	DESCRIPTION	END/ITEM	AGC - S/N	R.I.B NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
49.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	RAY 4 SYS 600 A, RAY 5 SYS 600B, RAY 6 SYS 600C, RAY 7 SYS 600D, RAY 13 SYS 602, RAY 16 SYS 200, RAY 19 SYS SP-1, RAY 20 SYS C2, RAY 28 SYS C14, RAY 30 SYS C11, RAY 27 SYS C-1, RAY 33 SYS LINK, RAY 32, RAY 34 SYS D1, RAY 36 SYS D3, RAY 38 SYS D5, RAY 40 SYS D7, RAY 41 THRU 47 SYS D8 THRU D14, RAY 49 SYS D16, RAY 52 THRU RAY 57 SYS D19 THRU D24, RAY 59 THRU RAY 63, SYS D26 THRU D30, RAY 65 THRU 91 SYS D32 THRU D54	0104135	ECP - 735	2003985-021X 2003985-061 2003950-021 2003950-021X 2003994-011 2003994-021	8104251	2003985-071X 2003985-081 2003950-051 2003950-051X 2003994-041 2003994-051 2003950-061

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	AU	THIS SHEET ADDED PER TDRR 36652		9 AUG 68	JJJ RWH
	AV	REVISED PER TDRR 36876		1 OCT 68	JJJ
	AW	REVISED PER TDRR 37079		3 DEC 68	JJJ

(AU) THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DWG NO CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN J. Ganowicz DATE 8 AUG 68 CHECKED Rw Hogue 9 AUG 68 APPROVAL ELDON C. HALL 11 MAR 66 CONTRACT	G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM
MATERIAL	NASA APPROVAL A C METZGER 22 MAR 66	SIZE D CODE IDENT NO. 80230 8104001
APPROVAL	MIT APPROVAL W. KUPFER	SCALE NONE SHEET 4 OF 4

AY 8104001

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ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10008	1003469 1003540	8104048	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003484-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003563-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	JA		11/7/67	FFK
AF		REVISION STATUS CHANGED	JRK		12-1-67	
Ⓜ AG		REVISION STATUS CHANGED	JRK		12-4-67	
Ⓜ AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
Ⓜ AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
Ⓜ AK		REVISION STATUS CHANGED	LK		6 FEB 68	
Ⓜ AL		REVISION STATUS CHANGED	RP		22 MAR 68	
Ⓜ AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
Ⓜ AN		REVISION STATUS CHANGED			3 JUN 68	
Ⓜ AP		REVISION STATUS CHANGED	JJJ	V.M.	25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
Ⓜ AS		REVISION STATUS CHANGED	A.N.		22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
Ⓜ AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
Ⓜ AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
Ⓜ AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 4

810-1001 AY

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ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1	VIBRATION DAMPENING KEYBOARD	MAIN DSKY	120 117, 112 121, 111, 109 122	0104061 0104059 0104081	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021	8104096 8104118 8104154	1003569-021 1003569-011 1003707-031 1003707-031
22.2		NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080		1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104157	1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1	EMI & ICD DSKY REWORK	MAIN DSKY	120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011	8104096 8104118 8104143 8104159 8104095 8104121	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011
23.2		NAV DSKY	120 117, 112 121, 111, 109 122 110	0104076 0104080		1003551 1003551 1003706-011 1003706-021 1003706-011	8104142 8104160	1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY	120 117, 112	0104061 0104059	ECP-195	1003484-011 1003484-011	8104096 8104118	1003569-021 1003569-011
24.2		NAV DSKY	120 117, 112	0104054 0104058		1003551 1003551	8104095 8104121	1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	- 1003700-031 1003707-011 1003706-011	8104140	- 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104208	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SCU		11/7/67	JGR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
Ⓜ AG		REVISION STATUS CHANGED	JRK		12-4-67	
Ⓜ AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
Ⓜ AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
Ⓜ AK		REVISION STATUS CHANGED	LK		6 FEB 68	
Ⓜ AL		REVISION STATUS CHANGED	RP		22 MAR 68	
Ⓜ AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
Ⓜ AN		REVISION STATUS CHANGED	JW		3 JUN 68	
Ⓜ AP		REVISION STATUS CHANGED	JJJ	V.M.	25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
Ⓜ AS		REVISION STATUS CHANGED	A.N.	CHP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
Ⓜ AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
Ⓜ AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
Ⓜ AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C HALL 11 MAR '66
APPROVED MIT W. KUPFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 4

8104001 AY

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	- 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	- 2003100-081 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	- 1003563-031 1003707-031 1003706-031	8104228 8104229	- 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 605 - 607	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003993-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, 83 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15, 16, 17, & 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28 / C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C37 - RAY 53	0104132	ECP-719	2003200-051 2003993-031 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17 - RAY 50, D31 - RAY 64, D18 - RAY 51 D15 - RAY 48 (CM 103) D25 - RAY 58	0104134	ECP-735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596	SA		11/7/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
Ⓜ AG		REVISED PER TDRR 34999	JRK		12-4-67	
Ⓜ AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
Ⓜ AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67	
Ⓜ AK		REVISED PER TDRR 35508	LK		6 FEB 68	
Ⓜ AL		REVISED PER TDRR 35841	RP		22 MAR 68	
Ⓜ AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
Ⓜ AN		REVISED PER TDRR 36273			3 JUN 68	
Ⓜ AP		REVISED PER TDRR 36365	JJJ		25 JUN 68	
AR		REVISED PER TDRR 36457	JJJ	RWH	17 JUL 68	
Ⓜ AS		REVISED PER TDRR 36484	A.N.	CJP	22 JUL 68	
AT		REVISED PER TDRR 36594	JJJ		3 AUG 68	
Ⓜ AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
Ⓜ AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
Ⓜ AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

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CAPACITOR VALUES ARE IN μf
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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R. Sayer 26 OCT '67
CHECKED 27 OCT 67
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A C METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 4

8104001 AY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

ITEM NO.	DESCRIPTION	END/ITEM	AGC- S/N	R.I.B NO.(REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
49.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	RAY 4 SYS 600 A, RAY 5 SYS 600B, RAY 6 SYS 600C, RAY 7 SYS 600D, RAY 13 SYS 602, RAY 16 SYS 200, RAY 19 SYS SP-1, RAY 20 SYS C2, RAY 28 SYS C14, RAY 30 SYS C11, RAY 27 SYS C-1, RAY 33 SYS LINK, RAY 32, RAY 34 SYS D1, RAY 36 SYS D3, RAY 38 SYS D5, RAY 40 SYS D7, RAY 41 THRU 47 SYS D8 THRU D14, RAY 49 SYS D16, RAY 52 THRU RAY 57 SYS D19 THRU D24, RAY 59 THRU RAY 63, SYS D26 THRU D30, RAY 65 THRU 91 SYS D32 THRU D54	0104135	ECP-735	2003985-021X 2003985-061 2003950-021 2003950-021X 2003994-011 2003994-021	8104251	2003985-071X 2003985-081 2003950-051 2003950-051X 2003994-041 2003994-051 2003950-061
50.0	DESC; DSKY STATUS/CAUTION	AGC DSKY ASSY	LM5-LM15, 5LM SIM(MSC), 2 (MIT/IL) CALC FC1, 2 SPARES	0104136	ECP-739	2003994-041 2003994-051 2003950-051 2003985-041	8104252	2003994-061 2003994-071 2003950-071 2003985-091

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	AU	THIS SHEET ADDED PER TDRR 36652		9 AUG 68	JJJ RWH
	AV	REVISED PER TDRR 36876		1 OCT 68	JJJ
	AW	REVISED PER TDRR 37079		3 DEC 68	JJJ
	AY	REVISED PER TDRR 37193		15 JAN 69	PHG

(AU) **THIS SHEET ADDED**

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DWG NO CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN DATE 8 AUG 68 CHECKED RWHogue 9 AUG 68 APPROVAL ELDON C. HALL 11 MAR 66 CONTRACT	G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM
MATERIAL	NASA APPROVAL A C METZGER 22 MAR 66	SIZE D CODE IDENT NO. 80230 8104001
APPROVAL	MIT APPROVAL W. KUPFER	SCALE NONE SHEET 4 OF 4

8104001

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8104001 AZ

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003136	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003136	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10008	1003469 1003540	8104048	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551- 1003484-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 109, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-136	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-169	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	120 121, 111	0104081	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

NOTES

1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SA		11/7/67	FPR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		6 FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISION STATUS CHANGED			3 JUN 68	
AP		REVISION STATUS CHANGED	JJJ		25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
AS		REVISION STATUS CHANGED	A.N.	CFP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
AZ		REVISION STATUS CHANGED	DKD		11 FEB 69	

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

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DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 4

AZ 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	P.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104153 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104060	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104031 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	1003700-031 1003707-011 1003706-011	8104140	1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	1003565-021 1003576-011 1003577-011	8104208	1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SAU		11/7/67	JSR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		6 FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISION STATUS CHANGED	JW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJJ	V.M.	25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
AS		REVISION STATUS CHANGED	A.N.	CJP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
AU		REVISED PER TDRR 30052	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
AZ		REVISION STATUS CHANGED	DKD		11 FEB 69	

8104001 AZ

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KUPFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 4

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 AZ

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	- 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	- 2003100-081 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	- 1003563-031 1003707-031 1003706-031	8104228 8104229	- 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 605-607	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003990-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15, 16, 17, & 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28 / C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C37 - RAY 53	0104132	ECP-719	2003200-051 2003993-051 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17 - RAY 50, D31 - RAY 64, D18 - RAY 51 D15 - RAY 48 (CM 103) D25 - RAY 58	0104134	ECP-735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596			11/7/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-4-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67	
AK		REVISED PER TDRR 35508	LK		6 FEB 68	
AL		REVISED PER TDRR 35841	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISED PER TDRR 36273			3 JUN 68	
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68	
AR		REVISED PER TDRR 36457	JJJ	RWH	17 JUL 68	
AS		REVISED PER TDRR 36484	A.N.		22 JUL 68	
AT		REVISED PER TDRR 36594	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
AZ		REVISION STATUS CHANGED	DKD		11 FEB 69	

(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R. Sayer 26 OCT 67
CHECKED 27 OCT 67
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A C METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 4

8104001 AZ

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ITEM NO.	DESCRIPTION	END/ITEM	AGC - S/N	R.I.B NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
49.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	RAY 4 SYS 600 A, RAY 5 SYS 600B, RAY 6 SYS 600C, RAY 7 SYS 600D, RAY 13 SYS 602, RAY 16 SYS 200, RAY 19 SYS SP-1, RAY 20 SYS C2, RAY 28 SYS C14, RAY 30 SYS C11, RAY 27 SYS C-1, RAY 33 SYS LINK, RAY 32, RAY 34 SYS D1, RAY 36 SYS D3, RAY 38 SYS D5, RAY 40 SYS D7, RAY 41 THRU 47 SYS D8 THRU D14, RAY 49 SYS D16, RAY 52 THRU RAY 57 SYS D19 THRU D24; RAY 59 THRU RAY 63 SYS D26 THRU D30, RAY 65 THRU 91 SYS D32 THRU D54	0104135	ECP-735	2003985-021X 2003985-061 2003950-021 2003950-021X 2003994-011 2003994-021	8104251	2003985-071X 2003985-081 2003950-051 2003950-051X 2003994-041 2003994-051 2003950-061
50.0	DESC; DSKY STATUS/CAUTION	AGC DSKY ASSY	LM5-LM15, 5LM SIM(MSC), 2 (MIT/IL) CALC FC1, 2 SPARES	0104136	ECP-739	2003994-041 2003994-051 2003950-051 2003985-041	8104252	2003994-061 2003994-071 2003950-071 2003985-091
51.C	LEM INSTALLATION KIT	INSTALLATION KIT COMPUTER GROUP LEM	LM 5, 6 & 7	0104137	ECP-743	6004000-021	8104253	6004000-051

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	AU	THIS SHEET ADDED PER TDRR 36652		9 AUG 68	JJJ RWH
	AV	REVISED PER TDRR 36876		1 OCT 68	JJJ
	AW	REVISED PER TDRR 37079		3 DEC 68	JJJ JAJ
	AY	REVISED PER TDRR 37193		15 JAN 69	PHG
	AZ	REVISED PER TDRR 37316		11 FEB 69	CKD JAJ

(AU) **THIS SHEET ADDED**

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG NO CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN J. [illegible] DATE 8 AUG 68 CHECKED Rw Hogue 9 AUG 68 APPROVAL ELDON C. HALL 11 MAR 66 CONTRACT	G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM
MATERIAL	NASA APPROVAL A C METZGER 22 MAR 66	SIZE D CODE IDENT NO. 80230 8104001
APPROVAL	MIT APPROVAL W. KUPFER	SCALE NONE SHEET 4 OF 4

8104001

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BA 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	- 20 20	0104033	R-10008	1003469 1003540	8104048	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003484-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 109, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003563-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1	L.M. A-37 + DSKY	COMPUTER	120 117, 112	0104046 0104057	ECP-111	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104061 0104059		1003484-011 1003484-011	8104096 8104118	1003569-021 1003569-011
18.3		NAV DSKY	120 117, 112	0104054 0104058		1003551 1003551	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	Sa		11/7/67	FFR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
Ⓜ AG		REVISION STATUS CHANGED	JRK		12-4-67	
Ⓜ AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
Ⓜ AJ		REVISION STATUS CHANGED	J.W.		23 DEC 67	
Ⓜ AK		REVISION STATUS CHANGED	LK		6 FEB 68	
Ⓜ AL		REVISION STATUS CHANGED	RP		22 MAR 68	
Ⓜ AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
Ⓜ AN		REVISION STATUS CHANGED			3 JUN 68	
Ⓜ AP		REVISION STATUS CHANGED	JJJ	Y.M.	25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
Ⓜ AS		REVISION STATUS CHANGED	H.N.		22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
Ⓜ AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
Ⓜ AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
Ⓜ AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
Ⓜ AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
AZ		REVISION STATUS CHANGED	DKD		11 FEB 69	
BA		REVISION STATUS CHANGED	JJJ		12 FEB 69	

Ⓐ REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES
1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWINGIN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR 1966
CHECKED C. MORRISSEY 9 MAR 1966
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 4

8104001 BA

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

BA 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104119 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	- 1003700-031 1003707-011 1003706-011	8104140	- 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109 122	0104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104208	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447, 460, 478	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SOU		11/7/67	JGR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
AK		REVISION STATUS CHANGED	LK		6 FEB 68	
AL		REVISION STATUS CHANGED	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISION STATUS CHANGED	JW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJJ	V.M.	25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
AS		REVISION STATUS CHANGED	A.N.	CFP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		[illegible] 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
AZ		REVISION STATUS CHANGED	DKD		11 FEB 69	
BA		REVISION STATUS CHANGED	JJJ		12 FEB 69	

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KUPFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

8104001 BA

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-081 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	- 1003563-031 1003707-031 1003706-031	8104228 8104229	- 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1, 6, 25, 26, 32, 34, 37, 45 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 605 - 607	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7-RAY 23 C2 - RAY 22 C8-RAY 24 C3 - RAY 17 C9 - RAY 29 C4 - RAY 18 C10-RAY 25 C5 - RAY 19 C11-RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003998-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12- RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S N 16, 19, 20, 27, 32, & 33	0104123	ECP-0584	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET -1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602-RAY 9 603-RAY 14 PC4-RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4-RAY 13 C1-RAY 28/ C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP-641 ECP-673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2-RAY 22 C9-RAY 29 C4-RAY 18 C10-RAY 25 C5-RAY 19 C12-RAY 26 C6-RAY 20 C13-RAY 27 C8-RAY 24 C14-RAY 28 C15-RAY 31 THRU C37-RAY 53	0104132	ECP-719	2003200-051 2003993-031 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP-704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17-RAY 50, D31-RAY 64, D18-RAY 51 D15-RAY 48 D25-RAY 58 (CM 103)	0104134	ECP-735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596			11/7/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
AG		REVISED PER TDRR 34999	JRK		12-4-67	
AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67	
AK		REVISED PER TDRR 35508	LK		6 FEB 68	
AL		REVISED PER TDRR 35841	RP		22 MAR 68	
AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
AN		REVISED PER TDRR 36273			3 JUN 68	
AP		REVISED PER TDRR 36365	JJJ		25 JUN 68	
AR		REVISED PER TDRR 36457	JJJ	RWH	17 JUL 68	
AS		REVISED PER TDRR 36484	A.N.	C7P	22 JUL 68	
AT		REVISED PER TDRR 36594	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
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MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 26 OCT '67
CHECKED 27 OCT 67
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A C METZGER
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 4

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49.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	RAY 4 SYS 600 A, RAY 5 SYS 600B, RAY 6 SYS 600C, RAY 7 SYS 600D, RAY 13 SYS 602, RAY 16 SYS 200, RAY 19 SYS SP-1, RAY 20 SYS C2, RAY 28 SYS C14, RAY 30 SYS C11, RAY 27 SYS C-1, RAY 33 SYS LINK, RAY 32, RAY 34 SYS D1, RAY 36 SYS D3, RAY 38 SYS D5, RAY 40 SYS D7, RAY 41 THRU 47 SYS D8 THRU D14, RAY 49 SYS D16, RAY 52 THRU RAY 57 SYS D19 THRU D24, RAY 59 THRU RAY 63 SYS D26 THRU D30, RAY 65 THRU 91 SYS D32 THRU D54	0104135	ECP - 735	2003985-021X 2003985-061 2003950-021 2003950-021X 2003994-011 2003994-021	8104251	2003985-071X 2003985-081 2003950-051 2003950-051X 2003994-041 2003994-051 2003950-061
50.0	DESC; DSKY STATUS/CAUTION	AGC DSKY ASSY	LM5-LM15, 5LM SIM(MSC), 2 (MIT/IL) CALC FC1, 2 SPARES	0104136	ECP - 739	2003994-041 2003994-051 2003950-051 2003985-041	8104252	2003994-061 2003994-071 2003950-071 2003985-091
51.0	LEM INSTALLATION KIT	INSTALLATION KIT COMPUTER GROUP LEM	LM 5, 6 & 7	0104137	ECP - 743	6004000-021	8104253	6004000-051
52.0	E/L GLASS RETROFIT	AGC DSAY ASSY	LM-4 & SUB, CM-106 & SUB	0104138	ECP - 0768	2003994-041 2003994-051 2003994-061 2003994-071	8104254	2003994-111 2003994-121 2003994-081 2003994-091

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	AU	THIS SHEET ADDED PER TDRR 36652		9 AUG 68	JJJ RWH
	AV	REVISED PER TDRR 36876		1 OCT 68	JJJ
	AW	REVISED PER TDRR 37079		3 DEC 68	JJJ
	AY	REVISED PER TDRR 37193		15 JAN 69	PHG
	AZ	REVISED PER TDRR 37316		FEB 69	DKD
	BA	REVISED PER TDRR 37317		12 FEB 69	JJJ

(AU) THIS SHEET ADDED

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
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3 PLACE DECIMALS + −
ANGLES + −
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INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN J. Conroy DATE 8 AUG 68
CHECKED RW Hogue 9 AUG 68
APPROVAL ELDON C. HALL 11 MAR 66
CONTRACT
NASA APPROVAL A C METZGER 22 MAR 66
MIT APPROVAL W. KUPFER

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

SIZE D
CODE IDENT NO. 80230
8104001
SCALE NONE
SHEET 4 OF 4

8104001

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BB 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R. I. B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R-10000 (ECP-6)	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	COMPUTER ASS'Y	8	0104029	TD-203	1003469	8104045	1003700-011
7.0 7.1 7.2	CONVERT AGC 20 TO AGC 107	COMPUTER ASS'Y MAIN DSKY	20 20	0104033	R-10000	1003469 1003540	8104048	1003700-011 1003553-011
8.0 8.1 8.2 8.3	UPDATE AGC 117 & 112	COMPUTER ASS'Y NAV. DSKY MAIN DSKY	117, 112 117, 112 117, 112	0104060	ECP-190	1003700-011 1003551 1003484-011	8104120	1003565-011 1003570-011 1003569-011
9.0	G&N FAILURE DETECT	MAIN DSKY	120 108 117, 112 100, 121, 111, 122, SP1, 123, 124, SP2 110	0104049	ECP-175	1003569-021 1003540 1003569-011 1003707-031 1003576-011	8104088	1003564-011 1003561-011 1003564-021 1003563-031 1003563-041
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0 13.1 13.2 13.3	UPDATE AGC 120	COMPUTER ASS'Y NAV DSKY MAIN DSKY	120 120 120	0104062	ECP-223	1003700-011 1003551 1003484-011	8104098	1003565-031 1003570-021 1003569-021
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-150	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104046 0104057 0104079	ECP-187	1003700-011 1003700-021 1003700-041 1003565-021	8104113	1003565-011 1003700-051 1003700-051 1003565-041
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104110 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	JA		11/7/67	JJR
AF		REVISION STATUS CHANGED	JRK		12-1-67	
Ⓜ AG		REVISION STATUS CHANGED	JRK		12-4-67	
Ⓜ AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
Ⓜ AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
Ⓜ AK		REVISION STATUS CHANGED	LK		6 FEB 68	
Ⓜ AL		REVISION STATUS CHANGED	RP		22 MAR 68	
Ⓜ AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
Ⓜ AN		REVISION STATUS CHANGED			3 JUN 68	
Ⓜ AP		REVISION STATUS CHANGED	JJJ	Y.M.	25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
Ⓜ AS		REVISION STATUS CHANGED	A.N.	CFP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
Ⓜ AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
Ⓜ AV		REVISION STATUS CHANGED	JJJ		68	
Ⓜ AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
Ⓜ AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
AZ		REVISION STATUS CHANGED	DKD		11 FEB 69	
Ⓜ BA		REVISION STATUS CHANGED	JJJ		12 FEB 69	
BB		REVISION STATUS CHANGED	PHG		21 MAY 69	

NOTES

1. SEE 1003400, 1003770, 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

		DATE
DRAWN	K.W. SIMPSON	8 MAR 1966
CHECKED	C. MORRISSEY	9 MAR 1966
APPROVED		
APPROVED	ELDON C. HALL	11 MAR 1966
APPROVED MIT	W. KUPFER	22 MAR 1966
APPROVED MSC	A.C. METZGER	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	8104001

SCALE NONE
SHEET 1 OF 4

8104001 BB

BB 8104001

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER ASS'Y	120, 117, 112 121, 111 109, 122 110	0104074 0104057 0104046 0104079	ECP-189	1003700-011 1003700-021 1003700-041 1003700-031	8104141 8104129 8104097	1003565-011 1003700-051 1003700-051 1003565-021
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 120 117, 112 121, 111, 109 122	0104081 0104059 0104081 0104054 0104058 0104080	ECP-184	1003484-011 1003484-011 1003707-011 1003707-021 1003551 1003551 1003706-011 1003706-021	8104096 8104118 8104154 8104095 8104121 8104157	1003569-021 1003569-011 1003707-031 1003707-031 1003570-021 1003570-011 1003706-031 1003706-031
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120 117, 112 121, 111, 109 122 110 120 117, 112 121, 111, 109 122 110	0104081 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	1003484-011 1003484-011 1003707-011 1003707-021 1003707-011 1003551 1003551 1003706-011 1003706-021 1003706-011	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	1003569-021 1003569-011 1003707-031 1003707-031 1003576-011 1003570-021 1003570-011 1003706-031 1003706-031 1003577-011
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-196	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120 117, 112 121, 111, 109 122	0104054 0104058 0104080	ECP-183	1003551 1003551 1003706-011 1003706-021	8104095 8104121 8104158	1003570-021 1003570-011 1003706-031 1003706-031
26.0 26.1 26.2	IMPROVED E/L'S	MAIN DSKY NAV DSKY	121, 111, 109 121, 111, 109	0104081 0104080	ECP-207	1003707-011 1003706-011	8104153 8104155	1003707-031 1003706-031
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109 122	0104080	ECP-252	1003706-011 1003706-021	8104156	1003706-031 1003706-031
28.0 28.1 28.2 28.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104077	ECP-285	- 1003700-031 1003707-011 1003706-011	8104140	- 1003565-021 1003576-011 1003577-011
29.0 29.1 29.2 29.3	UPDATE AGC 121, 111, 109, 122	COMPUTER ASS'Y MAIN DSKY NAV DSKY	121, 111 109, 122 121, 111, 109 122 121, 111, 109	0104082	ECP-295	1003700-021 1003700-041 1003707-011 1003707-021 1003706-011 1003706-021	8104151	- 1003700-051 1003700-051 1003707-031 1003707-031 1003706-031 1003706-031
30.0 30.1 30.2 30.3	UPDATE AGC 110	COMPUTER ASS'Y MAIN DSKY NAV DSKY	110 110 110	0104078	ECP-412	- 1003565-021 1003576-011 1003577-011	8104200	- 1003565-041 1003576-021 1003577-021
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447,460,478	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		REPLACES REV AD WITH CHANGE PER TDRR 34596	SCU		11/7/67	
AF		REVISION STATUS CHANGED	JRK		12-1-67	
AG		REVISION STATUS CHANGED	JRK		12-4-67	
AH		REVISION STATUS CHANGED	JRK		19 DEC 67	
AJ		REVISION STATUS CHANGED	J.W.		28 DEC 67	
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AN		REVISION STATUS CHANGED	JW		3 JUN 68	
AP		REVISION STATUS CHANGED	JJJ	V.N.	25 JUN 68	
AR		REVISION STATUS CHANGED	JJJ	RWH	17 JUL 68	
AS		REVISION STATUS CHANGED	J.N.	CJP	22 JUL 68	
AT		REVISION STATUS CHANGED	JJJ		8 AUG 68	
AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
AW		REVISION STATUS CHANGED	JJJ		3 DEC 68	
AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
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BB		REVISION STATUS CHANGED	PHG		21 MAY 69	

(AE) REPLACES REV AD WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K.W. SIMPSON 8 MAR '66
CHECKED C. MORRISSEY 9 MAR '66
APPROVED
APPROVED ELDON C. HALL 11 MAR '66
APPROVED MIT W. KUPFER 22 MAR '66
APPROVED MSC A.C. METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 4

BB 8104001

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ITEM NO.	DESCRIPTION	END ITEM	AGC - SN	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR. S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30 - 31	COMPUTER ASSY	C1 THRU C7 (RAY 16) (RAY 22) (RAY 18) (RAY 19)	0104104	ECP-486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16, RAY 22, RAY 17, RAY 18, RAY 19, RAY 20, RAY 23	0104113	ECP-474	- 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	- 2003100-081 2003100-061 2003100-071 2003100-091 2003200-041
33.1	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	12, 121-123 SP1 & SP2	0104110	ECP-474	1003700-051	8104220	1003700-071
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP-0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP-0441	- 1003563-031 1003707-031 1003706-031	8104228 8104229	- 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104118	ECP-0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1 6. 25. 26. 32. 34. 37. 40 THRU 47, 50 THRU 53	0104119	ECP-0481	2003076-011	8104223	2003076-021
38.0	CHANGING HARDWARE FOR LEM INSTALLATION KIT	INSTALLATION KIT COMPUTOR GROUP LEM	G&N 605 - 607	0104120	ECP-0558	6004000-011	8104232	6004000-021
39.0	RETROFIT TRAY "A" WIRED ASSY & REPLACE AGC POWER SUPPLY MODULE AND ADDITION OF VIBRATION PADS	COMPUTER ASSY	SYSTEM C1 - RAY 16 C7 - RAY 23 C2 - RAY 22 C8 - RAY 24 C3 - RAY 17 C9 - RAY 25 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C11 - RAY 30 C6 - RAY 20	0104121	ECP-0518 ECP-604	2003200-041 2003990-011	8104233	2003200-051 2003993-041
39.1	RETROFIT OF E. MEMORY VIBRATION PADS	COMPUTER ASSY	C12 - RAY 26	0104121	ECP-604	2003993-021	8104245	2003993-041
40.0	RETROFIT FRONT HOUSING ASSY AGC DSKY	AGC DSKY ASSY	RAY S/N 16, 19, 20, 27, 32, & 33	0104123	ECP-0504	2003950-011 2003949-011	8104234	2003950-021 2003949-031
41.0	RETROFIT ROPE MEMORY MODULES SUNDIAL PROGRAM, B3 MODULE	SUNDIAL COMPUTER PROGRAM ASSEMBLY	SETS 1 THRU 7	0104125	ECP-545	2021104-011 2021104-021 2021104-031	8104237	2021104-061 2021104-051 2021104-041
42.1	RETROFIT MAIN DSKY WITH NEW G&N FAILURE DETECT MODULE	AGC MAIN DSKY ASSY	G&N 122 & 123	0104127	ECP-642	1003563-051	8104240	1003563-071
42.2	RETROFIT G&N FAILURE DETECT MODULE	G&N FAILURE DETECT MODULE	RAY 15,16,17,& 18	0104127	ECP-642	1003220-011	8104243	1003220-021
43.0	RETROFIT ROPE MEMORY MODULES SUNBURST PROGRAM, B3 MODULE	SUNBURST COMPUTER PROGRAM ASSY	SET - 1	0104129	ECP-0559	2021106-021	8104244	2021106-031
44.0	RETROFIT BLOCK II COMPUTERS FOR THERMO VAC. CONFIGURATION	COMPUTER ASSY	602 - RAY 9 603 - RAY 14 PC4 - RAY 8	0104109	ECP-0301	2003100-021 2003100-021 2003100-021	8104217	2003100-031 2003100-041 2003100-051
45.0	DSKY FIRE-FIX & SPRING RETROFIT	UNIV. DSKY ASSY	PC4 - RAY 13 C1-RAY 28/ C3-RAY 30 D3, D4, D7 & SUB	0104126	ECP- 641 ECP- 673	2003985-051 2003950-011 2003994-011	8104241	2003985-061 2003950-031 2003994-021
46.0	"V" FAIL ALARM MODULE RETROFIT	COMPUTER ASSY	C2 - RAY 22 C9 - RAY 29 C4 - RAY 18 C10 - RAY 25 C5 - RAY 19 C12 - RAY 26 C6 - RAY 20 C13 - RAY 27 C8 - RAY 24 C14 - RAY 28 C15 - RAY 31 THRU C37 - RAY 53	0104132	ECP - 719	2003200-051 2003993-031 2003993-041	8104248	2003200-061 2003993-061 2003993-051
47.0	RETROFIT ROPE JUMPER MODULES	ROPE JUMPER MODULE	2 THRU 5, 7 THRU 24, 31, 33, 35, 48, 49 & 54	0104133	ECP - 704	2003076-011	8104249	2003076-031
48.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	D17 - RAY 50, D31 - RAY 64 D18 - RAY 51 D15 - RAY 48 (CM 103) D25 - RAY 58	0104134	ECP - 735	2003994-021	8104250	2003994-031

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
AE		THIS SHEET ADDED PER TDRR 34596	Ja		11/17/67	
AF		REVISED PER TDRR 34682	JRK		12-1-67	
Ⓜ AG		REVISED PER TDRR 34999	JRK		12-4-67	
Ⓜ AH		REVISED PER TDRR 35222	JRK		19 DEC 67	
Ⓜ AJ		REVISED PER TDRR 35319	J.W.		28 DEC 67	
Ⓜ AK		REVISED PER TDRR 35508	LK		6 FEB 68	
Ⓜ AL		REVISED PER TDRR 35841	RP		22 MAR 68	
Ⓜ AM		REVISED PER TDRR 36021	JJJ		8 APR 68	
Ⓜ AN		REVISED PER TDRR 36273	JW		3 JUN 68	
Ⓜ AP		REVISED PER TDRR 36365	JJJ		25 JUN 68	
AR		REVISED PER TDRR 36457	JJJ	RWH	17 JUL 68	
Ⓜ AS		REVISED PER TDRR 36484	A.N.	CJP	22 JUL 68	
AT		REVISED PER TDRR 36594	JJJ		8 AUG 68	
Ⓜ AU		REVISED PER TDRR 36652	JJJ	RWH	9 AUG 68	
Ⓜ AV		REVISION STATUS CHANGED	JJJ		1 OCT 68	
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Ⓜ AY		REVISION STATUS CHANGED	PHG		15 JAN 69	
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(AE) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

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APPLICATION	

UNLESS OTHERWISE SPECIFIED
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DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R J Ayer 26 OCT '67
CHECKED 27 OCT 67
APPROVED
APPROVED ELDON C. HALL 11 MAR 1966
APPROVED MIT W. KUPFER 22 MAR 1966
APPROVED MSC A C METZGER
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 3 OF 4

8104001 BB

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ITEM NO.	DESCRIPTION	END/ITEM	AGC- S/N	R.I.B NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
49.0	DSKY SAFETY GLASS RETROFIT	AGC DSKY ASSY	RAY 4 SYS 600 A, RAY 5 SYS 600B, RAY 6 SYS 600C, RAY 7 SYS 600D, RAY 13 SYS 602, RAY 16 SYS 200, RAY 19 SYS SP-1, RAY 20 SYS C2, RAY 28 SYS C14, RAY 30 SYS C11, RAY 27 SYS C-1, RAY 33 SYS LINK, RAY 32, RAY 34 SYS D1, RAY 36 SYS D3, RAY 38 SYS D5, RAY 40 SYS D7, RAY 41 THRU 47 SYS D8 THRU D14, RAY 49 SYS D16, RAY 52 THRU RAY 57 SYS D19 THRU D24, RAY 59 THRU RAY 63 SYS D26 THRU D30, RAY 65 THRU 91 SYS D32 THRU D54	0104135	ECP-735	2003985-021X 2003985-061 2003950-021 2003950-021X 2003994-011 2003994-021	8104251	2003985-071X 2003985-081 2003950-051 2003950-051X 2003994-041 2003994-051 2003950-061
50.0	DESC; DSKY STATUS/CAUTION	~~AGC~~ DSKY ASSY	LM5-LM15, 5LM SIM(MSC), 2 (MIT/IL) CALC FC1, 2 SPARES	0104136	ECP-739	2003994-041 2003994-051 2003950-051 2003985-041 2003985-031	8104252	2003994-061 2003994-071 2003950-071 2003985-091 2003985-111
51.0	LEM INSTALLATION KIT	INSTALLATION KIT COMPUTER GROUP LEM	LM 5, 6 & 7	0104137	ECP-743	6004000-021	8104253	6004000-051
52.0	E/L GLASS RETROFIT	AGC DSAY ASSY	LM-4 & SUB, CM-106 & SUB	0104138	ECP-0768	2003994-041 2003994-051 2003994-061 2003994-071	8104254	2003994-111 2003994-121 2003994-081 2003994-091

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
	AU	THIS SHEET ADDED PER TDRR 36652		9 AUG 68	JJJ RWH
	AV	REVISED PER TDRR 36876		1 OCT 68	JJJ
	AW	REVISED PER TDRR 37079		3 DEC 68	JJJ
	AY	REVISED PER TDRR 37193		15 JAN 69	PHG
	AZ	REVISED PER TDRR 37316		11 FEB 69	DKD
	BA	REVISED PER TDRR 37317		12 FEB 69	JJJ
	BB	REVISED PER TDRR 37602		21 MAY 69	PHG

(AU) THIS SHEET ADDED

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN DATE 8 AUG 68
CHECKED Rw Hogue 9 AUG 68
APPROVAL ELDON C. HALL 11 MAR 66
CONTRACT
NASA APPROVAL A C METZGER 22 MAR 66
MIT APPROVAL W. KUPFER

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

SIZE D
CODE IDENT NO. 80230
8104001
SCALE NONE
SHEET 4 OF 4

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8104001 A

REVISIONS TDRR 12533			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WK.

						RETROFIT KIT ASSEMBLY DRAWING					
						COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD	
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P. NO.	N.E.C.P. AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003		
	TELEMETRY FAIL & COMP FAIL	5, 6									
	CIRCUITS	& 7									

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DPAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL
NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN B. Katzuba DATE 2 SEP 64
CHECKED A. Cacciamo 4 Sep 64
APPROVAL R. K. Anderson 8 Sept 64
APPROVAL
APPROVAL Ellen C. Hall 9 Sept 64
NASA APPROVAL 9/9/64
MIT APPROVAL
MIT APPROVAL W Kupfer 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLIES
AGC

CODE IDENT NO. —— | SIZE D | NASA DRAWING NO. 8104001
SCALE NONE | WT | SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

8104001 B

REVISIONS TDRR 12531			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zimbrd CHK R.W.E.	4/3/65	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P.		RETROFIT KIT ASSEMBLY DRAWING					
						COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD	
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003		
	TELEMETRY FAIL & COMP FAIL	5, 6,									
	CIRCUITS	7									
2	G&N HARNESS TRAY	AGC 6, 7,	0104015	R-00015		1	8104013				
		8&20									

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL
NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN B. Katzulus DATE 2 SEP 64
CHECKED A. Caggiano 4 Sep 64
APPROVAL R. R. Anderson 8/4/64
APPROVAL
APPROVAL Eldon C. Hall 9 Sept 64
NASA APPROVAL 9/8/64
MIT APPROVAL
MIT APPROVAL 9 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLIES
AGC

CODE IDENT NO. —— SIZE D NASA DRAWING NO. 8104001
SCALE NONE WT SHEET 1 OF 1

8104001 B

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

8104001 C

REVISIONS TDRR 12531

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WN
B	REVISED PER TDRR 15664 DR R. Zumbrod CHK R.W.E.	2/3/65	HW
C	REVISED PER TDRR 15665 DR R. Zumbrod CHK R.W.E.	2/3/65	HW

RETROFIT KIT ASSEMBLY DRAWING

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P.		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD	
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC 5 6/7	0104001	R-00001	6/17/64			1	8104003		
	TELEMETRY FAIL & COMP FAIL										
	CIRCUITS										
2	G&N HARNESS TRAY	AGC 6, 7, 8&20	0104015	R-00015		1	8104013				
3	IMPROVED STRAND GATE	6, 7, 8&20	0104002	R-00002		2	8104040				
	TO PRESERVE MEMORY										

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN B. Katzula DATE 2 SEP 64
CHECKED A. Caggiano 4 Sep 64
APPROVAL R. K. Anderson 8 Sep 64
APPROVAL
APPROVAL Ellen C Hall 9 Sept 64
NASA APPROVAL [illegible] 9/8/64
MIT APPROVAL
MIT APPROVAL W. Kupfer 9 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLIES
AGC

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 1

8104001 C

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

8104001 D

REVISIONS TDRR 12531			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zimbard CHK R.W.E.	2/3/65	HAL
C	REVISED PER TDRR 15665 DR R. Zimbard CHK R.W.E.	2/3/65	HWC
D	REVISED PER TDRR 15670 DR R. Zimbard CHK R.W.E.	3/4/65	HWC

						RETROFIT KIT ASSEMBLY DRAWING					
				N.E.C.P.		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD	
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003		
	TELEMETRY FAIL & COMP FAIL	5,6									
	CIRCUITS	&7									
2	G&N HARNESS TRAY	AGC	0104015	R-00015		1	8104013				
		6.7. 8&20									
3	IMPROVED STRAND GATE	6,7,	0104002	R-00002		2	8104040				
	TO PRESERVE MEMORY	8&20									
4	VERB-NOUN E/L	5,6,7,	0104022	ERP10000				2	8104035	1	8104035
		8,20, &9	0104022	ERP10000				1	8104035	1	8104035

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT

DRAWN B. Katzulis DATE 2 SEP 64
CHECKED G. Gagliano 4 Sep 64
APPROVAL R. R. Anderson 9 Sept 64
APPROVAL
APPROVAL Eldon C. Hall 9 Sept 64
NASA APPROVAL [illegible] 9/9/64
MIT APPROVAL
MIT APPROVAL W. [illegible] 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLIES
AGC

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 1

8104001 D

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 E

						RETROFIT KIT ASSEMBLY DRAWING					
				N.E.C.P.		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD	
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003		
	TELEMETRY FAIL & COMP FAIL	5, 6, & 7									
	CIRCUITS										
2	G&N HARNESS TRAY	AGC 6, 7, 8&20	0104015	R-00015		1	8104013				
3	IMPROVED STRAND GATE	6, 7,	0104002	R-00002		2	8104040				
	TO PRESERVE MEMORY	8&20									
4	VERB-NOUN E/L	5,6,7,	0104022	ERP10000				2	8104035	1	8104035
		8,20, &9	0104022	ERP10000				1	8104035	1	8104035
5	UNMANNED S/C	6	0104024	ERP10001				1003495	8104037		
	CONFIGURATION MAIN DSKY										

REVISIONS TDRR 12531

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WN
B	REVISED PER TDRR 15664 DR R. Zenbord CHK R.H.E.	2/3/65	HAL
C	REVISED PER TDRR 15665 DR R. Zenbord CHK R.H.E.	2/3/65	HAL
D	REVISED PER TDRR 15670 DR R. Zenbord CHK R.H.E.	2/4/65	HAL
E	REVISED PER TDRR 15666 DR R. Zenbord CHK R.H.E.	2/4/65	HAL

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN B. Katsulis DATE 2 SEP 64
CHECKED A. Caggiano 8 Sept 64
APPROVAL R. K. Anderson 9 Sept 64
APPROVAL
APPROVAL Eldon C Hall 9 Sept 64
NASA APPROVAL [illegible] 9/8/64
MIT APPROVAL
MIT APPROVAL W. [illegible] 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLIES
AGC

CODE IDENT NO. —— SIZE D NASA DRAWING NO. 8104001
SCALE NONE WT SHEET 1 OF 1

8104001 E

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 F

REVISIONS TDRR 12531

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zimbard CHK R.H.E.	2/3/65	Hwe
C	REVISED PER TDRR 15665 DR R. Zimbard CHK R.H.E.	2/3/65	Hwe
D	REVISED PER TDRR 15670 DR R. Zimbard CHK R.H.E.	2/4/65	Hwe
E	REVISED PER TDRR 15666 DR R. Zimbard CHK R.H.E.	2/4/65	Hwe
F	REVISED PER TDRR 15668 DR R. Zimbard CHK R.H.E.	2/4/65	Hwe

						RETROFIT KIT ASSEMBLY DRAWING					
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P.		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD	
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003		
	TELEMETRY FAIL & COMP FAIL	5 6/7									
	CIRCUITS										
2	G&N HARNESS TRAY	AGC 6,7, 8&20	0104015	R-00015		1	8104013				
3	IMPROVED STRAND GATE	6,7,	0104002	R-00002		2	8104040				
	TO PRESERVE MEMORY	8&20									
4	VERB-NOUN E/L	5,6,7,	0104022	ERP10000				2	8104035	1	8104035
		8,20, &9	0104022	ERP10000				1	8104035	1	8104035
5	UNMANNED S/C	6	0104024	ERP10001				1003495	8104037		
	CONFIGURATION MAIN DSKY										
6	UNMANNED S/C	6	0104025	ERP10001		1003496	8104038				
	CONFIGURATION COMPUTER										

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT

DRAWN B. Katzulis DATE 2 SEP 64
CHECKED A. Caggiano 4 Sep 64
APPROVAL R. K. Anderson 8 Sept 64
APPROVAL
APPROVAL Eldon C Hall 9 Sept 64
NASA APPROVAL 9/1/64
MIT APPROVAL
MIT APPROVAL 9 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLIES
AGC

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE WT SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 G

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zeitford CHK R.H.E.	2/3/65	Hac
C	REVISED PER TDRR 15665 DR R. Zeitford CHK R.H.E.	2/3/65	Hac
D	REVISED PER TDRR 15670 DR R. Zeitford CHK R.H.E.	2/4/65	Hac.
E	REVISED PER TDRR 15666 DR R. Zeitford CHK R.H.E.	2/4/65	Hac
F	REVISED PER TDRR 15668 DR R. Zeitford CHK R.H.E.	2/4/65	Hac
G	REVISED PER TDRR 15667 DR R. Zeitford CHK R.H.E.	2/4/65	Hac

REVISIONS TDRR 12539

RETROFIT KIT ASSEMBLY DRAWING

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P. NO.	N.E.C.P. AUTH DATE	COMPUTER MOD. NO.	COMPUTER DWG NO.	MAIN PANEL DISPLAY & KEYBOARD MOD. NO.	MAIN PANEL DISPLAY & KEYBOARD DWG NO.	NAV PANEL DISPLAY & KEYBOARD MOD. NO.	NAV PANEL DISPLAY & KEYBOARD DWG NO.	A.G.C. SUBSYSTEM GROUP MOD. NO.	A.G.C. SUBSYSTEM GROUP DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL	5, 6											
	CIRCUITS	& 7											
2	G&N HARNESS TRAY	AGC 6, 7, 8&20	0104015	R-00015		1	8104013						
3	IMPROVED STRAND GATE	6, 7, 8&20	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY												
4	VERB-NOUN E/L	5,6,7,	0104022	ERP10000				2	8104035	1	8104035		
		8,20, &9	0104022	ERP10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	ERP10001				1003495	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	ERP10001		1003496	8104038						
	CONFIGURATION COMPUTER											SEE NOTE 3	8104039
7	UNMANNED S/C	6	0104026	ERP10001									
	CONFIGURATION												
	SUBSYSTEM GROUP												

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. ITEMS 5,6&7 ARE REQUIRED FOR A.G.C. SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN B. Katsulis DATE 2 SEP 64
CHECKED A. Gaggiano 4 Sept 64
APPROVAL R. F. Anderson 3 Sept 64
APPROVAL
APPROVAL Eldon C Hall 9 Sept 64
NASA APPROVAL 9/8/64
MIT APPROVAL
MIT APPROVAL 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLIES
AGC

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 1

8104001 G

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

H 1004018

	REVISIONS TDRR 12531		
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WK
B	REVISED PER TDRR 15664 DR R. Zimbard CHK R.W.E.	2/3/65	Hue
C	REVISED PER TDRR 15665 DR R. Zimbard CHK R.W.E.	2/3/65	Hue
D	REVISED PER TDRR 15670 DR R. Zimbard CHK R.W.E.	2/4/65	Hue
E	REVISED PER TDRR 15666 DR R. Zimbard CHK R.W.E.	2/4/65	Hue
F	REVISED PER TDRR 15668 DR R. Zimbard CHK R.W.E.	2/4/65	Hue
G	REVISED PER TDRR 15667 DR R. Zimbard CHK R.W.E.	2/4/65	Hue
H	REVISED PER TDRR 17141 DR M. B. Ripley CHK R.W.E.	3/24/65	Hue

RETROFIT KIT LIST DRAWING

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P./ERP		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD		A.G.C. SUBSYSTEM GROUP	
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC 5, 6, & 7	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL												
	CIRCUITS												
2	G&N HARNESS TRAY	AGC 6, 7, 8&20	0104015	R-00015		1	8104013						
3	IMPROVED STRAND GATE	6, 7, 8&20	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY												
4	VERB-NOUN E/L	5,6,7,	0104022	R-10000				2	8104035	1	8104035		
		8,20, &9	0104022	R-10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	R-10001				1003495	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	R-10001		1003496	8104038						
	CONFIGURATION COMPUTER												
7	UNMANNED S/C	6	0104026	R-10001								SEE NOTE 3	8104039
	CONFIGURATION												
	SUBSYSTEM GROUP												
8	CONVERT AGC 8 TO AGC 108	AGC 8	0104028	R-10002		1003700-011	8104044						
9	MODIFY SUBSYSTEM AGC 8	AGC 8	0104029	R-10002								1003770-041	8104045
	TO AGC 108												

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. ITEMS 5,6&7 ARE REQUIRED FOR A.G.C. SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN B. Katzulis DATE 2 SEP 64
CHECKED A. Cappiano 2 Sept 64
APPROVAL R. K. Anderson 8 Sept 64
APPROVAL
APPROVAL John C Hall 9 Sept 64
NASA APPROVAL 9/1/64
MIT APPROVAL
MIT APPROVAL 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. ——
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

J 8104001

REVISIONS TDRR 12531

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zimbard CHK R.H.E.	2/3/65	HWL
C	REVISED PER TDRR 15665 DR R. Zimbard CHK R.H.E.	2/3/65	HWL
D	REVISED PER TDRR 15670 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
E	REVISED PER TDRR 15666 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
F	REVISED PER TDRR 15668 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
G	REVISED PER TDRR 15667 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
H	REVISED PER TDRR 17141 DR M. B. Ripley CHK R.H.E.	3/24/65	HWL
J	REVISED PER TDRR 17463 DR J.C. Economou CHK R.H.E.	4/15/65	RAB

RETROFIT KIT LIST DRAWING

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P./ERP		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD		A.G.C. SUBSYSTEM GROUP	
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL	5,6,											
	CIRCUITS	&7											
2	G&N HARNESS TRAY	AGC	0104015	R-00015		1	8104013						
		6, 7, 8&20											
3	IMPROVED STRAND GATE	6, 7,	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY	8&20											
4	VERB-NOUN E/L	5,6,7,	0104022	R-10000				2	8104035	1	8104035		
		8,20, &9	0104022	R-10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	R-10001				1003495	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	R-10001		1003496	8104038						
	CONFIGURATION COMPUTER												
7	UNMANNED S/C	6	0104026	R-10001								SEE NOTE 3	8104039
	CONFIGURATION												
	SUBSYSTEM GROUP												
8	CONVERT AGC 8 TO AGC 108	AGC 8	0104028	R-10002		1003700-011	8104044						
9	MODIFY SUBSYSTEM AGC 8	AGC 8	0104029	R-10002								1003770-041	8104045
	TO AGC 108												
10	CONVERT AGC 20 TO AGC 107	AGC 20	0104031	R-10008		1003700-011	8104046						

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. ITEMS 5,6&7 ARE REQUIRED FOR A.G.C. SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN B. Katzulis DATE 2 SEP 64
CHECKED A. Gaggiano 9 Sept 64
APPROVAL R. R. Anderson 9 Sept 64
APPROVAL
APPROVAL Eldon C. Hall 9 Sept 64
NASA APPROVAL 9/8/64
MIT APPROVAL
MIT APPROVAL 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. ——
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 K

REVISIONS TDRR 12531

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zimbard CHK R.H.E.	2/3/65	HWL
C	REVISED PER TDRR 15665 DR R. Zimbard CHK R.H.E.	2/3/65	HWL
D	REVISED PER TDRR 15670 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
E	REVISED PER TDRR 15666 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
F	REVISED PER TDRR 15668 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
G	REVISED PER TDRR 15667 DR R. Zimbard CHK R.H.E.	2/4/65	HWL
H	REVISED PER TDRR 17141 DR M. B. Ripley CHK R.H.E.	3/24/65	HWL
J	REVISED PER TDRR 17463 DR J.C. Economou CHK R.H.E.	4/15/65	RAB
K	REVISED PER TDRR 17893 DR M. Ripley CHK	6/24/65	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P./ERP		RETROFIT KIT LIST DRAWING							
						COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD		A.G.C. SUBSYSTEM GROUP	
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL	5 6											
	CIRCUITS	& 7											
2	G&N HARNESS TRAY	AGC 6, 7,	0104015	R-00015		1	8104013						
		8&20											
3	IMPROVED STRAND GATE	6, 7,	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY	8&20											
4	VERB-NOUN E/L	5,6,7,	0104022	R-10000				2	8104035	1	8104035		
		8,20, &9	0104022	R-10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	R-10001				1003495-011	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	R-10001		1003496-011	8104038						
	CONFIGURATION COMPUTER												
7	UNMANNED S/C	6	0104026	R-10001								SEE NOTE 3	8104039
	CONFIGURATION												
	SUBSYSTEM GROUP												
8	CONVERT AGC 8 TO AGC 108	AGC 8	0104028	R-10002		1003700-011	8104044						
9	MODIFY SUBSYSTEM AGC 8	AGC 8	0104029	R-10002								1003770-041	8104045
	TO AGC 108												
10	CONVERT AGC 20 TO AGC 107	AGC 20	0104031	R-10008		1003700-011	8104046						
11	UNMANNED S/C												
	CONFIGURATION MAIN DSKY	AGC 20	0104032	R-10008				1003553-011	8104047				
12	MODIFY SUBSYSTEM AGC 20	AGC 20	0104033	R-10008								1003770-051	8104048
	TO AGC 107												

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. ITEMS 5,6&7 ARE REQUIRED FOR A.G.C. SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
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DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

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INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN B. Katula DATE 2 SEP 64
CHECKED A. Cappiano 8 Sept 64
APPROVAL R. K. Anderson 8 Sept 64
APPROVAL
APPROVAL Eldon C Hall 9 Sept 64
NASA APPROVAL 9/8/64
MIT APPROVAL
MIT APPROVAL 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. — SIZE D NASA DRAWING NO. 8104001
SCALE NONE WT SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 K

REVISIONS TDRR 12531

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zinbard CHK R.H.E.	2/3/65	
C	REVISED PER TDRR 15665 DR R. Zinbard CHK R.H.E.	2/3/65	
D	REVISED PER TDRR 15670 DR R. Zinbard CHK R.H.E.	2/4/65	
E	REVISED PER TDRR 15666 DR R. Zinbard CHK R.H.E.	2/4/65	
F	REVISED PER TDRR 15668 DR R. Zinbard CHK R.H.E.	2/4/65	
G	REVISED PER TDRR 15667 DR R. Zinbard CHK R.H.E.	2/4/65	
H	REVISED PER TDRR 17141 DR M. B. Ripley CHK R.H.E.	3/24/65	
J	REVISED PER TDRR 17463 DR J.C. Economou CHK R.H.E.	3/15/65	R.A.B.
K	REVISED PER TDRR 17893 DR [illegible] CHK [illegible]	6/24/65	
L	REVISED PER TDRR 23984 DR [illegible] CHK [illegible]	12/1/65	

RETROFIT KIT LIST DRAWING

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P./ERP		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD		A.G.C. SUBSYSTEM GROUP	
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	CHECK FAIL, KEY RLSE,	AGC 5 6/7	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL												
	CIRCUITS												
2	G&N HARNESS TRAY	AGC 6, 7, 8 & 20	0104015	R-00015		1	8104013						
3	IMPROVED STRAND GATE	6, 7, 8 & 20	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY												
4	VERB-NOUN E/L	5, 6, 7,	0104022	R-10000				2	8104035	1	8104035		
		8, 20, & 9	0104022	R-10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	R-10001				1003495-011	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	R-10001		1003496-011	8104038						
	CONFIGURATION COMPUTER												
7	UNMANNED S/C	6	0104026	R-10001								SEE NOTE 3	8104039
	CONFIGURATION												
	SUBSYSTEM GROUP												
8	CONVERT AGC 8 TO AGC 108	AGC 8	0104028	R-10002		1003700-011	8104044						
9	MODIFY SUBSYSTEM AGC 8	AGC 8	0104029	R-10002								1003770-041	8104045
	TO AGC 108												
10	CONVERT AGC 20 TO AGC 107	AGC 20	0104031	R-10008		1003700-011	8104046						
11	UNMANNED S/C												
	CONFIGURATION MAIN DSKY	AGC 20	0104032	R-10008				1003553-011	8104047				
12	MODIFY SUBSYSTEM AGC 20	AGC 20	0104033	R-10008								1003770-051	8104048
	TO AGC 107												
13	UPDATE AGC 117 & 112	AGC 117 & 112	0104060	0190	10/26/65	1003566-011	8104119	1003569-011	8104118	1003570-011	8104121	1003770-071	8104120

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. ITEMS 5, 6 & 7 ARE REQUIRED FOR A.G.C. SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
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FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN B. Katzenberg DATE 2 SEP 64
CHECKED
APPROVAL
APPROVAL
APPROVAL Eldon C. Hall 9 Sept 64
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

M 8104001

REVISIONS TDRR 12531

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. [illegible] CHK R.W.E.	2/3/65	
C	REVISED PER TDRR 15665 DR R. [illegible] CHK R.W.E.	2/3/65	
D	REVISED PER TDRR 15670 DR R. [illegible] CHK R.W.E.	2/4/65	
E	REVISED PER TDRR 15666 DR R. [illegible] CHK R.W.E.	2/4/65	
F	REVISED PER TDRR 15668 DR R. [illegible] CHK R.W.E.	2/4/65	
G	REVISED PER TDRR 15667 DR R. [illegible] CHK R.W.E.	2/4/65	
H	REVISED PER TDRR 17141 DR M. B. Ripley CHK R.W.E.	3/24/65	
J	REVISED PER TDRR 17463 DR J.C. Economou CHK R.W.E.	4/15/65	R.A.B.
K	REVISED PER TDRR 17893 DR M. Ripley CHK [illegible]	6/24/65	
L	REVISED PER TDRR 23984 DR [illegible] CHK [illegible]	12/7/65	
M	REVISED PER TDRR 24034 DR D. A. Clermont CHK [illegible]	12/14/65	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P./ERP NO.	N.E.C.P./ERP AUTH DATE	COMPUTER MOD. NO.	COMPUTER KIT NO.	MAIN PANEL DISPLAY & KEYBOARD MOD. NO.	MAIN PANEL DISPLAY & KEYBOARD KIT NO.	NAV PANEL DISPLAY & KEYBOARD MOD. NO.	NAV PANEL DISPLAY & KEYBOARD KIT NO.	A.G.C. SUBSYSTEM GROUP MOD. NO.	A.G.C. SUBSYSTEM GROUP KIT NO.
						RETROFIT KIT LIST DRAWING							
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL	5, 6,											
	CIRCUITS	& 7											
2	G&N HARNESS TRAY	AGC 6, 7, 8&20	0104015	R-00015		1	8104013						
3	IMPROVED STRAND GATE	6, 7,	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY	8&20											
4	VERB-NOUN E/L	5,6,7,	0104022	R-10000				2	8104035	1	8104035		
		8,20, &9	0104022	R-10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	R-10001				1003495-011	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	R-10001		1003496-011	8104038						
	CONFIGURATION COMPUTER												
7	UNMANNED S/C	6	0104026	R-10001								SEE NOTE 3	8104039
	CONFIGURATION												
	SUBSYSTEM GROUP												
8	CONVERT AGC 8 TO AGC 108	AGC 8	0104028	R-10002		1003700-011	8104044						
9	MODIFY SUBSYSTEM AGC 8	AGC 8	0104029	R-10002								1003770-041	8104045
	TO AGC 108												
10	CONVERT AGC 20 TO AGC 107	AGC 20	0104031	R-10008		1003700-011	8104046						
11	UNMANNED S/C												
	CONFIGURATION MAIN DSKY	AGC 20	0104032	R-10008				1003553-011	8104047				
12	MODIFY SUBSYSTEM AGC 20	AGC 20	0104033	R-10008								1003770-051	8104048
	TO AGC 107												
13	UPDATE AGC 117 & 112	AGC 117	0104060	0190	10/26/65	1003565-011	8104119	1003569-011	8104118	1003570-011	8104121	1003770-071	8104120
		& 116											
14	G & N FAILURE DETECT	120	0104049	0175				1003564-011	8104088			1003770-111	8104088
		108						1003564-011	8104088			1003770-121	8104088
		117 112						1003564-021	8104088			1003770-131	8104088
		121						1003563-011	8104088			1003770-141	8104088
		111 109											
		122						1003563-021	8104088			1003770-151	8104088
		SP182						1003563-031	8104088			1003770-161	8104088
		123 124											
		110						1003563-011	8104088			1003770-171	8104088

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. ITEMS 5,6&7 ARE REQUIRED FOR A.G.C. SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

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DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN B. Kateules DATE 2 SEPT 64
CHECKED A. Cacciamani 2 Sept 64
APPROVAL R. R. Anderson 2 Sept 64
APPROVAL
APPROVAL Eldon C. Hall 2 Sept 64
NASA APPROVAL [illegible] 9/8/64
MIT APPROVAL
MIT APPROVAL [illegible] 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO.	SIZE	NASA DRAWING NO.
80230	D	8104001

SCALE NONE WT SHEET 1 OF 1

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N 8104001

REVISIONS TDRR 12531			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR CHK R.H.E.	2/3/65	
C	REVISED PER TDRR 15665 DR CHK R.H.E.	2/3/65	
D	REVISED PER TDRR 15670 DR CHK R.H.E.	2/4/65	
E	REVISED PER TDRR 15666 DR CHK R.H.E.	2/4/65	
F	REVISED PER TDRR 15668 DR CHK R.H.E.	2/4/65	
G	REVISED PER TDRR 15667 DR CHK R.H.E.	2/4/65	
H	REVISED PER TDRR 17141 DR M. B. Ripley CHK R.H.E.	5/24/65	
J	REVISED PER TDRR 17463 DR J.C. Economou CHK R.H.E.	4/15/65	RAB
K	REVISED PER TDRR 17893 DR M. Ripley CHK	6/24/65	
L	REVISED PER TDRR 23984 DR CHK	12/1/65	
M	REVISED PER TDRR 24034 DR D. A. Clermont CHK	12/16/65	
N	REVISED PER TDRR 24782 DR A. W. Johansen CHK	1/7/66	

RETROFIT KIT LIST DRAWING

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P./ERP		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD		A.G.C. SUBSYSTEM GROUP	
				NO.	AUTH DATE	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL	5,6											
	CIRCUITS	&7											
2	G&N HARNESS TRAY	AGC 6,7,	0104015	R-00015		1	8104013						
		8&20											
3	IMPROVED STRAND GATE	6,7,	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY	8&20											
4	VERB-NOUN E/L	5,6,7,	0104022	R-10000				2	8104035	1	8104035		
		8,20, &9	0104022	R-10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	R-10001				1003495-011	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	R-10001		1003496-011	8104038						
	CONFIGURATION COMPUTER												
7	UNMANNED S/C	6	0104026	R-10001								SEE NOTE 3	8104039
	CONFIGURATION												
	SUBSYSTEM GROUP												
8	CONVERT AGC 8 TO AGC 108	AGC 8	0104028	R-10002		1003700-011	8104044						
9	MODIFY SUBSYSTEM AGC 8	AGC 8	0104029	R-10002								1003770-041	8104045
	TO AGC 108												
10	CONVERT AGC 20 TO AGC 107	AGC 20	0104031	R-10008		1003700-011	8104046						
11	UNMANNED S/C												
	CONFIGURATION MAIN DSKY	AGC 20	0104032	R-10008				1003553-011	8104047				
12	MODIFY SUBSYSTEM AGC 20	AGC 20	0104033	R-10008								1003770-051	8104048
	TO AGC 107												
13	UPDATE AGC 117&112	AGC 117	0104060	0190	10/26/65	1003565-011	8104119	1003569-011	8104118	1003570-011	8104121	1003770-071	8104120
		& 116											
14	G & N FAILURE DETECT	120	0104049	0175				1003564-011	8104088			1003770-111	8104088
		108						1003564-011	8104088			1003770-121	8104088
		117 112						1003564-021	8104088			1003770-131	8104088
		121 111						1003563-011	8104088			1003770-141	8104088
		109											
		122						1003563-021	8104088			1003770-151	8104088
		SP182						1003563-031	8104088			1003770-161	8104088
		123											
		124											
		110						1003563-011	8104088			1003770-171	8104088
15	IMPROVED VIBRATION	AGC 121	0104041	0171		1003700-041	8104087					1003770-061	8104087
	DAMPENING MATERIAL	111											
	AGC SYS 121&111 &110	AGC 110	0104041	0171		1003700-061	8104087					1003770-101	8104087

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MILL-D-70327
3. ITEMS 5,6 & 7 ARE REQUIRED FOR AGC SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
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INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN B. Katzulis DATE 2 SEP 64
CHECKED
APPROVAL
APPROVAL
APPROVAL Ellen C Hall 9 Sept 64
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 d

REVISIONS TDRR 12531			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 12533	9/9/64	WH
B	REVISED PER TDRR 15664 DR R. Zimbard CHK R.H.E.	2/3/65	Hwc
C	REVISED PER TDRR 15665 DR R. Zimbard CHK R.H.E.	2/3/65	Hwc
D	REVISED PER TDRR 15670 DR R. Zimbard CHK R.H.E.	2/4/65	Hwc
E	REVISED PER TDRR 15666 DR R. Zimbard CHK R.H.E.	2/4/65	Hwc
F	REVISED PER TDRR 15668 DR R. Zimbard CHK R.H.E.	2/4/65	Hwc
G	REVISED PER TDRR 15667 DR R. Zimbard CHK R.H.E.	2/4/65	Hwc
H	REVISED PER TDRR 17141 DR M. B. Ripley CHK R.H.E.	3/24/65	Hwc
J	REVISED PER TDRR 17463 DR J.C. Clemmons CHK R.H.E.	4/15/65	RAB
K	REVISED PER TDRR 17893 DR M. Ripley CHK Hagan	6/24/65	
L	REVISED PER TDRR 23984 DR J.P. Tsafikas CHK Hagan	12/7/65	
M	REVISED PER TDRR 24034 DR D. A. Clermont CHK Hagan	12/14/65	
N	REVISED PER TDRR 24782 DR A. W. Johansen CHK	1/13/66	J McCarthy
P	REVISED PER TDRR 24840 DR J.P. Tsafikas CHK R.H.E.	2/1/66	J McCarthy

						RETROFIT KIT LIST DRAWING							
				N.E.C.P./ERP		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD		A.G.C. SUBSYSTEM GROUP	
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	NO.	AUTH DATE	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.
1	CHECK FAIL, KEY RLSE,	AGC	0104001	R-00001	6/17/64			1	8104003				
	TELEMETRY FAIL & COMP FAIL	5, 6,											
	CIRCUITS	7											
2	G&N HARNESS TRAY	AGC 6, 7, 8&20	0104015	R-00015		1	8104013						
3	IMPROVED STRAND GATE	6, 7,	0104002	R-00002		2	8104040						
	TO PRESERVE MEMORY	8&20											
4	VERB-NOUN E/L	5,6,7,	0104022	R-10000				2	8104035	1	8104035		
		8,20, &9	0104022	R-10000				1	8104035	1	8104035		
5	UNMANNED S/C	6	0104024	R-10001				1003495-011	8104037				
	CONFIGURATION MAIN DSKY												
6	UNMANNED S/C	6	0104025	R-10001		1003496-011	8104038						
	CONFIGURATION COMPUTER												
7	UNMANNED S/C	6	0104026	R-10001								SEE NOTE 3	8104039
	CONFIGURATION												
	SUBSYSTEM GROUP												
8	CONVERT AGC 8 TO AGC 108	AGC 8	0104028	R-10002		1003700-011	8104044						
9	MODIFY SUBSYSTEM AGC 8	AGC 8	0104029	R-10002								1003770-041	8104045
	TO AGC 108												
10	CONVERT AGC 20 TO AGC 107	AGC 20	0104031	R-10008		1003700-011	8104046						
11	UNMANNED S/C												
	CONFIGURATION MAIN DSKY	AGC 20	0104032	R-10008				1003553-011	8104047				
12	MODIFY SUBSYSTEM AGC 20	AGC 20	0104033	R-10008								1003770-051	8104048
	TO AGC 107												
13	UPDATE AGC 117&112	AGC 117 & 116	0104060	0190	10/26/65	1003566-011	3104119	1003569-011	8104118	1003570-011	8104121	1003770-071	8104120
14	G & N FAILURE DETECT	120	0104049	0175				1003564-011	8104088			1003770-111	8104088
		108						1003564-011	8104088			1003770-121	8104088
		117 112						1003564-021	8104088			1003770-131	8104088
		121						1003563-011	8104088			1003770-141	8104088
		111 109											
		122						1003563-021	8104088			1003770-151	8104088
		SP182						1003563-031	8104088			1003770-161	8104088
		123 124											
		110						1003563-011	8104088			1003770-171	8104088
15	IMPROVED VIBRATION	AGC 121	0104041	0171		1003700-041	8104087					1003770-061	8104087
	DAMPENING MATERIAL	111											
	AGC SYS 121&111&110	AGC 110	0104041	0171		1003700-061	8104087					1003770-101	8104087

NOTES
1. SEE 1003400 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MILL-D-70327
3. ITEMS 5,6&7 ARE REQUIRED FOR AGC SUBSYSTEM GROUP 1003497 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN B. Katzulis DATE 2 SEP 64
CHECKED A. Gaggiano 2 Sep 64
APPROVAL R. R. Anderson 2 Sept 64
APPROVAL
APPROVAL Eldon C. Hall 2 Sept 64
NASA APPROVAL 9/1/64
MIT APPROVAL
MIT APPROVAL 9 Sept 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
NASA DRAWING NO. 8104001
SCALE NONE
WT
SHEET 1 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
P		THIS SHEET ADDED PER TDRR 24840		RKE gm		

						RETROFIT KIT LIST DRAWING							
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	N.E.C.P./ERP		COMPUTER		MAIN PANEL DISPLAY & KEYBOARD		NAV PANEL DISPLAY & KEYBOARD		A.G.C. SUBSYSTEM GROUP	
				NO.	AUTH DATE	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.
16	UPDATE AGC 120	AGC 120	0104062	223		1003565-011	8104097	1003569-021	8104096	1003570-021	8104095	1003770-181	8104098
17	THERMAL TEST COVER	AGC 120	0104068	159		N/A	8104099						

Ⓟ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 26 JUL 66
CHECKED R. Edwards 27 Jul 66
APPROVED 27 JUL 66
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

8104001 P

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104001 R

REVISIONS							
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
R		REPLACES REV P WITH CHANGE PER TDRR 27327			9/2-66		wR

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0	VERB-NOUN E/L			0104022	R10000	1003469-011	8104035	MOD-1
4.1		MAIN PANEL DISPLAY & KEYBOARD	-5, 6, 7			1003459		MOD-2
4.2			8, 20, 9			1003540		MOD-1
4.3		NAV PANEL DISPLAY & KEYBOARD	5, 6, 7, 8, 20, 9			1003458 1003524		MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0	REPLACE DECODE MODULES				ECP-186			
12.1		MAIN DSKY	117, 112	0104059		1003484-011	8104118	1003569-011
12.2		NAV DSKY	117, 112	0104058		1003551	8104121	1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-181
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-187	SEE 1003770	8104113	SEE 1003770
18.0	L.M. A-37 + DSKY				ECP-111			
18.1		COMPUTER	120 117, 112	0104046 0104057		1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
18.2		MAIN DSKY	120 117, 112	0104061 0104059		1003484-011 1003484-011	8104096 8104118	1003569-021 1003569-011
18.3		NAV DSKY	120 117, 112	0104054 0104058		1003551 1003551	8104095 8104121	1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104046 0104079	ECP-189	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0	VIBRATION DAMPENING KEYBOARD				ECP-184			
22.1		MAIN DSKY	120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104081		SEE 1003770	8104096 8104118 8104154	SEE 1003770
22.2		NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080		SEE 1003770	8104095 8104121 8104157	SEE 1003770
23.0	EMI & ICD DSKY REWORK				ECP-182			
23.1		MAIN DSKY	120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 [illegible] 0104081		SEE 1003770	8104096 8104118 8104143 8104159	SEE 1003770
23.2		NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122	0104054 0104058 0104076 0104080		SEE 1003770	8104095 8104121 8104142 8104160	SEE 1003770
24.0	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE				ECP-195			
24.1		MAIN DSKY	120 117, 112	0104061 0104059		1003484-011 1003484-011	8104096 8104118	1003569-021 1003569-011
24.2		NAV DSKY	120 117, 112	0104054 0104058		1003551 1003551	8104095 8104121	1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-183	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400 AND 1003770 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K. Singer 18 MAR 1966
CHECKED 9 June 1966
APPROVED
APPROVED Edw. C. Hall 11 [illegible]
APPROVED MIT W. Kupfer A. G. METZGER 22 [illegible]
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 R

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REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		THIS SHEET ADDED PER TDRR 27327			7/22/66	WR

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	285	1003770-021	8104140	1003770-191

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

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APPLICATION

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CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN Kal Simpson 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED Eldon C. Hall
APPROVED MIT A. C. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

MASTER

8104001 R

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

S 8104001

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R	—	REPLACES REV P WITH CHANGE PER TDRR 27327	—			
S		CHANGED PER TDRR 29703	SWR		6-29-6	P. Braun

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10000	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 100, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 100	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-187	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104046 0104079	ECP-189	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-183	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400 AND 1003770 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN R. Singer 8 MAR 1966
CHECKED
APPROVED
APPROVED Eldon C Hall
APPROVED MIT D. Hoag
A. G. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 S

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

S 8104001

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	8104077	285	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121, 111, 109, 122	AGC GROUP	121, 111, 109, 122	0104082	295	SEE 1003770	8104151	1003770-091

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		THIS SHEET ADDED PER TDRR 27327			3/22/66	
S		CHANGED PER TDRR 29703	SUR	G.Z.	6-29-66	

Ⓡ THIS SHEET ADDED

S 8104001

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED
APPROVED MIT A. C. METZGER
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	8104001

SCALE NONE

SHEET 2 OF 2

T 8104001

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703	JWR	A.K.	6-29-66	P. Brown
T		CHANGED PER TDRR 31514	JVR	A.K.	10.31.66	

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104080	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-181
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-187	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104046 0104079	ECP-189	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-182	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-183	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400 AND 1003770 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED 9 June 1966
APPROVED
APPROVED
APPROVED MIT A. G. METZGER
APPROVED MSC
DATE

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 T

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		THIS SHEET ADDED PER TDRR 27327			7/22/66	
S		CHANGED PER TDRR 29703	SUK	G.Z.	6-29-66	
T		CHANGED PER TDRR 31514	JVR	G.Z.	10/31/66	T.J.R

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	205	1003770-021	8104140	1003770-191
29.0	UPDATE : AGC 121, 111, 109, 122	AGC GROUP	121, 111, 109, 122	0104082	295	(SEE) 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

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INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN K. Simpson 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED Eldon C. Hall
APPROVED MIT A. C. METZGER
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	8104001

SCALE NONE
SHEET 2 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

U 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.D. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.D.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-106	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-107	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-108	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-105	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104046 0104079	ECP-109	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104065 0104081 0104054 0104058 0104076 0104080	ECP-102	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-103	SEE 1003770	8104095 8104121 8104158	SEE 1003770

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R	—	REPLACES REV P WITH CHANGE PER TDRR 27327	—			
S	—	CHANGED PER TDRR 29703	SWR	A.T.	6-29-66	P. Braun
T.		CHANGED PER TDRR 31514	JVR	A.T.	10/31/66	T J R
U		CHANGED PER TDRR 32349	JPC.	J.C.	1/17/67	T J R

NOTES
1. SEE 1003400 AND 1003770 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN K. Simpson 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED Eldon C. Hall
APPROVED MIT A. G. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

U 8104001

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.D. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104001		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104000		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104000	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	285	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121, 111, 109, 122	AGC GROUP	121, 111, 109, 122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓡ R		THIS SHEET ADDED PER TDRR 27327			7/22/66	
S		CHANGED PER TDRR 29703	SWK	G.Z.	6-29-66	
T		CHANGED PER TDRR 31514	JVR	G.Z.	10/31/66	J.C.R
U		CHANGED PER TDRR 32349		J.C.	1/17/67	J.C.R

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN		8 MAR 1966
CHECKED		9 MAR 1966
APPROVED		
APPROVED	Ellen C. Hall	
APPROVED MIT	A. C. METZGER	
APPROVED MSC		DATE

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

8104001 U

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

A 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.D. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/M MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	MOD-1 1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 112	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-187	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-188	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-185	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 0104046 0104079	ECP-189	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-184	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104095 0104081 0104054 0104058 0104076 0104080	ECP-182	SEE 1003770 SEE 1003770	8104096 8104118 8104183 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-183	SEE 1003770	8104095 8104121 8104158	SEE 1003770

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703	SWR		6-29-66	
T.		CHANGED PER TDRR 31514	JVR		10/31/66	
U		CHANGED PER TDRR 32349	P.G.	J.C.	1/17/67	
V		CHANGED PER TDRR 32872			3/1/67	

8104001 V

NOTES
1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED
APPROVED MIT A. G. METZGER
APPROVED MSC

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
DATE
SCALE NONE
SHEET 1 OF 2

8104001 V

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓡ R		THIS SHEET ADDED PER TDRR 27327				
S		CHANGED PER TDRR 29703			6-29-66	
T		CHANGED PER TDRR 31514			10/31/66	
U		CHANGED PER TDRR 32349		J.C.	1/17/67	
V		CHANGED PER TDRR 32872			3/1/67	

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.D. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0 26.1 26.2	IMPROVED E/L'S 	 MAIN DSKY NAV DSKY	 121, 111, 109 121, 111, 109	 0104081 0104080	ECP-207	 SEE 1003770 SEE 1003770	 8104153 8104155	 SEE 1003770 SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	205	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121,111,109,122	AGC GROUP	121,111,109,122	0104082	295	(SEE)1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1,C2	AGC GROUP	C1 & C2	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30-31	COMPUTER ASSY	C1,C2,C4&C5	0104104	ECP 486,	2003200-021	8104212	2003200-031

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED
APPROVED MIT A. C. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA [illegible]

M 1004018

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-3
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10000	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	[illegible]	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-106	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-199	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-107	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY & MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-100	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-105	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 [illegible] 0104079	ECP-109	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 [illegible] 0104081 0104054 0104058 0104076 0104080	ECP-102	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-103	SEE 1003770	8104095 8104121 8104158	SEE 1003770

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703	SWR		6-29-66	
T		CHANGED PER TDRR 31514	JVR		10/31/66	
U		CHANGED PER TDRR 32349		J.C.	1/17/67	
V		CHANGED PER TDRR 32872			3/11/67	
W		CHANGED PER TDRR 33437			10 MAY 67	

NOTES
1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED Edw. C. Hall
APPROVED MIT
A. G. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 W

W 8104001

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.D. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 100	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	285	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121, 111, 109, 122	AGC GROUP	121, 111, 109, 122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1, C2	AGC GROUP	C1 & C2	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30-31	COMPUTER ASSY	C1 THRU C7	0104104	ECP 486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601, 602, 603, 201 PC1 THRU PC4 C1 THRU C7	0104113	ECP 474	2003100-021 2003100-051 2003100-011 2003100-041 2003100-031 2003200-031	8104221	2003100-081 2003100-091 2003100-111 2003100-071 2003100-061 2003200-041

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		THIS SHEET ADDED PER TDRR 27327				
S		CHANGED PER TDRR 29703			6-29-66	
T		CHANGED PER TDRR 31514			10/31/66	
U		CHANGED PER TDRR 32349			1/17/67	
V		CHANGED PER TDRR 32872				
W		CHANGED PER TDRR 33437				

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED
APPROVED MIT
A. L. HOPKINS
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT
KIT LIST COMPUTER
SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

8104001 W

8104001 Y

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703			6-29-66	
T		CHANGED PER TDRR 31514	JVR		10-13-66	
U		CHANGED PER TDRR 32349		G.C.	1/17/67	
V		CHANGED PER TDRR 32872			3/11/67	
W		CHANGED PER TDRR 33437				
Y		CHANGED PER TDRR 33807				

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFX NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003462 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-3
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	1003497-011
6.0	CONVERT AGC 8 TO AGC 100	AGC GROUP	-8	0104029	TD-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 100, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 100	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-186	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-199	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-107	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-100	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-105	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104079 0104057 0104079	ECP-109	SEE 1003770	8104141 8104117 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104089 0104081 0104054 0104058 0104076 0104080	ECP-102	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-103	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED
APPROVED MIT A. C. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 Y

[illegible]

Y 8104001

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	0104077	205	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121,111,109,122	AGC GROUP	121,111,109,122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1,C2	AGC GROUP	C1.&C2	0104101	ECPR 443 ECP 440,447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30-31	COMPUTER ASSY	C1 THRU C7	0104104	ECP 486	2003200-021	8104212	2003200-03
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601,602,603,201 PC1 THRU PC4 & C1 THRU C7	0104113	ECP 474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-06 2003100-07 2003100-08 2003100-09 2003100-117 2003200-04
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP 0425	1003564-021 1003570-011	8104231 8104227	1003564-03 1003570-03
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112,121,122,123, SPARE 1 & SPARE 2	0104117	ECP 0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-06 1003563-05 1003707-04 1003706-04
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112,121,122,123, SPARE 1 & SPARE 2	0104118	ECP 0463	1003706-041	8104230	1003706-051

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		THIS SHEET ADDED PER TDRR 27327	—		3/22/66	
S		CHANGED PER TDRR 29703			6-7-66	
T		CHANGED PER TDRR 31514				
U		CHANGED PER TDRR 32349				
V		CHANGED PER TDRR 32872				
W		CHANGED PER TDRR 33437				
Y		CHANGED PER TDRR 33807				

8104001 Y

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 8 MAR 1966
CHECKED
APPROVED
APPROVED Eldon C. Hall
APPROVED MIT A. L. METZGER
APPROVED MSC
DATE

G&N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 2 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

Z 8104001

ITEM NO.	DESCRIPTION	END ITEM	AGC - S/N	R.I.B. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.B.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1.0	CHECK FAIL, KEY RLSE, TELEMETRY FAIL & COMP. FAIL CKTS	NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7	0104001	R-00001	1003459	8104003	MOD-1
2.0	G & N HARNESS TRAY	COMPUTER	-6, 7, 8 & 20	0104015	ECP-2	1003469 1003186	8104013	MOD-1 MOD-1
3.0	IMPROVED STRAND GATE TO PRESERVE MEMORY	COMPUTER	-6, 7, 8 & 20	0104002	R-00002	1003469 1003186	8104040	MOD-2 MOD-2
4.0 4.1 4.2 4.3	VERB-NOUN E/L	MAIN PANEL DISPLAY & KEYBOARD NAV PANEL DISPLAY & KEYBOARD	-5, 6, 7 8, 20, 9 5, 6, 7, 8, 20, 9	0104022	R10000	1003469-011 1003459 1003540 1003458 1003524	8104035	MOD-1 MOD-2 MOD-1 MOD-1 MOD-1
5.0	UNMANNED S/C CONFIGURATION	AGC GROUP	-6	0104026	ECP-9	1003400-1	8104039	1003497-011
6.0	CONVERT AGC 8 TO AGC 108	AGC GROUP	-8	0104029	TB-203	1003400-2	8104045	1003770-041
7.0	CONVERT AGC 20 TO AGC 107	AGC GROUP	-20	0104033	R-10008	1003400-2	8104048	1003770-051
8.0	UPDATE AGC 117 & 112	AGC GROUP	-117, 112	0104060	ECP-190	1003770-011	8104120	1003770-071
9.0	G & N FAILURE DETECT	AGC GROUP	120, 108, 117, 112, 110, 121, 111, 109, 122, SP1, 123, 124, SP2	0104049	ECP-175	SEE 1003770	8104088	SEE 1003770
10.0	REPLACE STANDBY SWITCH	COMPUTER	120, 117, 112, 108	0104065	ECP-147	1003700-011	8104112	N/A
11.0	VIBRATION DAMPENING-COMPUTER	COMPUTER	120 117, 122	0104046 0104057	ECP-114	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
12.0 12.1 12.2	REPLACE DECODE MODULES	MAIN DSKY NAV DSKY	117, 112 117, 112	0104059 0104058	ECP-106	1003484-011 1003551	8104118 8104121	1003569-011 1003570-011
13.0	UPDATE AGC 120	AGC SUBSYSTEM	120	0104062	ECP-223	1003770-011	8104098	1003770-101
14.0	INSTALLATION THERMOCOUPLES AGC COVER	COMPUTER	120	0104068	ECP-159	1003565-011	8104099	1003565-031
15.0	REWORK POWER SWITCH TO ADD POTTING	COMPUTER P/S MODULE	120, 117, 112, 110 SPARE S/N 37, 38, 39, 40, 41	0104074 0104057 0104046	ECP-212	1003113-011	8104114 8104119 8104097	1003113-021
16.0	IMPROVED VIBRATION CUSHIONING MATERIAL	COMPUTER	110 121, 111	0104041	ECP-171	1003700-031 1003700-021	8104087	1003700-061 1003700-041
17.0	REPLACEMENT FRONT CLOSE-OUT PANEL	COMPUTER	120, 117, 112, 110, 121, 111, 109, 122	0104046 0104057 0104079	ECP-107	SEE 1003770	8104113	SEE 1003770
18.0 18.1 18.2 18.3	L.M. A-37 + DSKY	COMPUTER MAIN DSKY NAV DSKY	120 117, 112 120 117, 112 120 117, 112	0104046 0104057 0104061 0104059 0104054 0104058	ECP-111	1003700-011 1003700-011 1003484-011 1003484-011 1003551 1003551	8104097 8104119 8104096 8104118 8104095 8104121	1003565-011 1003565-011 1003569-021 1003569-011 1003570-021 1003570-011
19.0	ADD RESISTOR TRAY A MARK BUTTON PROBLEM	COMPUTER	120 117, 112	0104046 0104057	ECP-108	1003700-011 1003700-011	8104097 8104119	1003565-011 1003565-011
20.0	ADD MOISTURE SEALING GASKETS	COMPUTER	120, 117, 112	0104046 0104057	ECP-105	1003700-011	8104117	1003565-011
21.0	GROUND 0 VOLTS TO AGC TRAY	COMPUTER	120, 117, 112, 110 121, 111, 109, 122	0104074 0104057 [illegible] 0104079	ECP-109	SEE 1003770	8104141 8104119 8104097	SEE 1003770
22.0 22.1 22.2	VIBRATION DAMPENING KEYBOARD	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110 121, 111, 109, 122	0104061 0104059 0104081 0104054 0104058 0104080	ECP-104	SEE 1003770 SEE 1003770	8104096 8104118 8104154 8104095 8104121 8104157	SEE 1003770 SEE 1003770
23.0 23.1 23.2	EMI & ICD DSKY REWORK	MAIN DSKY NAV DSKY	120, 117, 112, 110, 121, 111, 109, 122 120, 117, 112, 110, 121, 111, 109, 122	0104061 0104059 0104075 0104081 0104054 0104058 0104076 0104080	ECP-102	SEE 1003770 SEE 1003770	8104096 8104118 8104143 8104159 8104095 8104121 8104142 8104160	SEE 1003770 SEE 1003770
24.0 24.1 24.2	DSKY KEYBOARD BUTTON TRAVEL INTERFERENCE	MAIN DSKY NAV DSKY	120 117, 112 120 117, 112	0104061 0104059 0104054 0104058	ECP-195	1003484-011 1003484-011 1003551 1003551	8104096 8104118 8104095 8104121	1003569-021 1003569-011 1003570-021 1003570-011
25.0	NAV DSKY GUIDE PIN REPLACEMENT	NAV DSKY	120, 117, 112, 110 121, 111, 109, 122	0104054 0104058 0104080	ECP-103	SEE 1003770	8104095 8104121 8104158	SEE 1003770

NOTES
1. SEE 1003400, 1003770 AND 2003991 FOR AGC SUBSYSTEMS
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
R		REPLACES REV P WITH CHANGE PER TDRR 27327				
S		CHANGED PER TDRR 29703			6-29-66	
T		CHANGED PER TDRR 31514	JVR		10/31/66	
U		CHANGED PER TDRR 32349		J.C.	1/17/67	
V		CHANGED PER TDRR 32872			3/11/67	
W		CHANGED PER TDRR 33437				
Y		CHANGED PER TDRR 33807				
Z		CHANGED PER TDRR 33815				

Ⓡ REPLACES REV P WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN 8 MAR 1966
CHECKED 9 MAR 1966
APPROVED
APPROVED
APPROVED MIT A. G. METZGER
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230
SIZE D
DRAWING NO. 8104001
SCALE NONE
SHEET 1 OF 2

8104001 Z

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

ITEM NO.	DESCRIPTION	END ITEM	S/N	R.I.D. NO. (REF)	AUTHORIZATION E.C.P. NO. OR S.O.W.	P/N MOD (REF)	RFK NO.	NEW P/N (REF)
26.0	IMPROVED E/L'S				ECP-207			
26.1		MAIN DSKY	121, 111, 109	0104081		SEE 1003770	8104153	SEE 1003770
26.2		NAV DSKY	121, 111, 109	0104080		SEE 1003770	8104155	SEE 1003770
27.0	REPLACE 1 X 4 E/L'S	NAV DSKY	121, 111, 109, 122	0104080	ECP-252	SEE 1003770	8104156	SEE 1003770
28.0	UPDATE AGC 110	AGC GROUP	110	8104077	205	1003770-021	8104140	1003770-191
29.0	UPDATE AGC 121,111,109,122	AGC GROUP	121,111,109,122	0104082	295	SEE 1003770	8104151	1003770-091
30.0	UPDATE AGC 110	AGC GROUP	110	0104078	412	1003770-191	8104208	1003770-201
31.0	UPDATE AGC C1,C2	AGC GROUP	C1.&C2 (RAY 16) (RAY 22)	0104101	ECPR 443 ECP 440, 447	2003200-011	8104209	2003200-021
32.0	DISABLE REGULATOR CIRCUIT IN AGC POWER SUPPLY MODULES A30-31	COMPUTER ASSY	C1 THRU C7 (RAY16)(RAY22)(RAY18)(RAY19)	0104104	ECP 486	2003200-021	8104212	2003200-031
33.0	INSTALLATION OF TEST CONNECTOR TO COMPUTER ASSY	COMPUTER ASSY	601,602,603,201 PC1 THRU PC4 & C1 THRU C7 RAY S/N FOR C1 THRU C7 RAY 16,RAY22,RAY17, RAY 18,RAY19,RAY20,RAY 23	0104113	ECP 474	2003100-011 2003100-021 2003100-031 2003100-041 2003100-051 2003200-031	8104221	2003100-061 2003100-071 2003100-081 2003100-091 2003100-117 2003200-041
34.0	ADDITION OF RUBBER ISOLATORS TO DSKY ASSY	MAIN & NAV DSKY	117 & SPARE 2	0104116	ECP 0425	1003564-021 1003570-011	8104231 8104227	1003564-031 1003570-031
35.0	SCREENING OF RELAY MODULES AND ADDITION OF DSKY ISOLATORS	MAIN & NAV DSKY	112, 121, 122, 123, SPARE 1 & SPARE 2	0104117	ECP 0441	1003563-051 1003563-031 1003707-031 1003706-031	8104228 8104229	1003563-061 1003563-051 1003707-041 1003706-041
36.0	ADDITION OF DSKY GROUND AND LONGER SCREWS	NAV DSKY	112,121,122,123, SPARE 1 & SPARE 2	0104118	ECP 0463	1003706-041	8104230	1003706-051
37.0	ADDITION OF RESISTORS TO ROPE JUMPER MODULES	ROPE JUMPER MODULE	RAY S/N 1,6,25,26,32,34,37,45 THRU 47, 50 THRU 53	0104119	ECP 0481	2003076-011	8104223	2003076-021

REVISIONS

	SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓡ	R		THIS SHEET ADDED PER TDRR 27327			7/22/66	L.D
	S		CHANGED PER TDRR 29703	[illegible]	G.Z.	9-29-66	P. [illegible]
	T		CHANGED PER TDRR 31514	J.V.R.	[illegible]	10/31/66	T.J.R.
	U		CHANGED PER TDRR 32349	J.P.G.	J.C.	[illegible]/67	T.J.R.
	V		CHANGED PER TDRR 32872	[illegible]	[illegible]	3/1/67	T.J.R.
	W		CHANGED PER TDRR 33437	[illegible]	J.C.	[illegible] MAY 67	T.J.R.
	Y		CHANGED PER TDRR 33807	P.A.J.	[illegible]	5 JUN 67	T.J.R.
	Z		CHANGED PER TDRR 33815	P.A.J.	[illegible]	[illegible] 67	T.J.R.

Ⓡ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN [illegible] 8 MAR 1966
CHECKED [illegible] 9 MAR 1966
APPROVED
APPROVED Eldon C. Hall [illegible]
APPROVED MIT A. C. METZGER
APPROVED MSC
DATE

G & N MASTER RETROFIT KIT LIST COMPUTER SUBSYSTEM

CODE IDENT NO 80230 | SIZE D | DRAWING NO. 8104001

SCALE NONE | SHEET 2 OF 2

GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104002 AA

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
J	REPLACES REV H WITH CHANGES PER TDRR 21332		
K	CHANGED PER TDRR 22893 DR CHK APPD		
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD		
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD		
N	CHANGED PER TDRR 2570[illegible] DR CHK		
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD		
R	CHANGED PER TDRR 26483 DR CHK APPD		
S	CHANGED PER TDRR 26675 DR CHK APPD		
T	CHANGED PER TDRR 26868 DR CHK APPD		
U	CHANGED PER TDRR 27329 DR CHK APPD		
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD		
W	CHANGED PER TDRR 27706 DR CHK APPD		
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD		
Z	CHANGED PER TDRR 27868 DR CHK APPD		
AA	CHANGED PER TDRR 2789[illegible] DR J. Kelley CHK APPD		

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES,	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH [illegible]	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	13&14	0104034	IN SCOPE CHANGE	1020395	8104043	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	N SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A.J. Marrero DATE 8 Jul 65
CHECKED 13 Jul 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF

8104002 AA

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24224	[illegible]
N	CHANGED PER TDRR 25704 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. [illegible] APPD P.C.D	[illegible]
R	CHANGED PER TDRR 26683 DR D. Blenjer CHK [illegible] APPD [illegible]	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
T	CHANGED PER TDRR 26863 DR [illegible] CHK [illegible] APPD PED	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD PED	[illegible]/66
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. [illegible] APPD PED	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD [illegible]	[illegible]
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	[illegible]
AA	CHANGED PER TDRR 27890 DR J. [illegible] CHK [illegible] APPD	[illegible]

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL C. [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AA

8104002 AA

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(l)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092 0104095	ECP-75	N/A	8104169	2016313-011												X		
					N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD P.E.D	7/1/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD PED	7/22/66	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD P.E.D.	[illegible] 66	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C. [illegible] APPD P.E.D	6/26/66	
Z	CHANGED PER TDRR 27888 DR. R [illegible] CHK [illegible] APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. [illegible] CHK G. [illegible] APPD	7/27/66	

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. P. [illegible] DATE 17 FEB 66
CHECKED [illegible] 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/1/66
NASA APPROVAL
MIT APPROVAL [illegible]
MIT APPROVAL [illegible] 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AA

8104002 AA

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707	—	
Z	CHANGED PER TDRR 27888 DR R Schier CHK APPD	7/6/66	
AA	CHANGED PEP TDRR 27890 DR J Helling CHK A. Kufer APPD	7/27/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT - SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A. J. Bro DATE 28 MAR 66
CHECKED
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AA

8104002 AA

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/24/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					

Ⓐ THIS SHEET ADDED

8104002 AA

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL P. 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104002 AB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	
K	CHANGED PER TDRR 22895 DR CHK APPD	[illegible]	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD	[illegible]	
N	CHANGED PER TDRR 25104 DR CHK	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	3/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	3/23/66	
T	CHANGED PER TDRR 26868 DR CHK APPD	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	[illegible]	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	[illegible]	
W	CHANGED PER TDRR 27706 DR CHK APPD	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK APPD	7/12/66	
AB	CHANGED PER TDRR 27886 DR. CHK APPD	7/28/66	

Ⓙ REPLACES REV H WITH CHANGE

8104002 AB

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. DATE 8 Jul 65
CHECKED D. 13 Jul 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 5

8104002 AB

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/1/65	
N	CHANGED PER TDRR 25104 DR CHK A. APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C. APPD P.E.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. APPD P.E.D	3/23/66	
T	CHANGED PER TDRR 26863 DR CHK APPD P.E.D	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK APPD P.E.D	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D		
Y	CHANGED PER TDRR 27707 DR CHK C.B. APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED 12 Nov 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL 23 Nov 65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AB

8104002 AB

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	WK
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR Tom [illegible] CHK C.D. APPD PED	4/22/66	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD P.E.D	23 [illegible] 66	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C. [illegible] APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R [illegible] CHK [illegible] APPD	7/[illegible]/66	
AA	CHANGED PER TDRR 27890 DR J [illegible] CHK G. [illegible] APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED KIT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	3104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

Ⓣ THIS SHEET ADDED

8104002 AB

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. [illegible] DATE 1/7/66
CHECKED [illegible] 18 FEB66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
NASA APPROVAL
MIT APPROVAL [illegible] 4/4/66
MIT APPROVAL [illegible] 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AB

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R CHK APPD	7/6/66	
AA	CHANGED PER TDRR 27890 DR CHK APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/26/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 3,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014033-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020236		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461 131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014410-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

(Y) THIS SHEET ADDED

8104002 AB

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28MAR66
CHECKED
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL
MIT APPROVAL 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AB

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. P. Battist CHK APPD	7/28/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 16	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G & N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						

Ⓐ THIS SHEET ADDED

8104002 AB

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL P. 7 APR 66
APPROVAL B. 4/12/66
APPROVAL
NASA APPROVAL 4/19/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

8104002 AC

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W50 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STPAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	[illegible]
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD [illegible]	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	[illegible]/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD [illegible]	3/23/66	[illegible]
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD [illegible]	4/1/66	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD [illegible]	[illegible] 66	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD [illegible]	6/16/66	[illegible]
Z	CHANGED PER TDRR 27888 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	[illegible]/66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]
AC	CHANGED PER TDRR 27894 DR [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]

Ⓙ REPLACES REV H WITH CHANGE

8104002 AC

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 8 Jul '65
CHECKED D Frazier 13 Jul '65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 5

8104002 AC

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24284	[illegible]
N	CHANGED PER TDRR 25704 DR CHK APPD	[illegible]
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	[illegible]
R	CHANGED PER TDRR 26683 DR CHK APPD	[illegible]
S	CHANGED PER TDRR 26675 DR CHK APPD	[illegible]
T	CHANGED PER TDRR 26863 DR CHK APPD	[illegible]
U	CHANGED PER TDRR 27329 DR CHK APPD	[illegible]
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	[illegible]
W	CHANGED PER TDRR 27706 DR CHK APPD	[illegible]
Y	CHANGED PER TDRR [illegible] DR CHK C.D. APPD	[illegible]
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Holley CHK APPD	[illegible]
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Holley CHK APPD	[illegible]

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104031 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014078		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12/10/65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AC

8104002 AC

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	7/1/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	/66	
W	CHANGED PER TDRR 27706 DR CHK Hayward APPD P.E.D	66	
Y	CHANGED PER TDRR 27707 DR CHK APPD P.E.D	6/26/66	
Z	CHANGED PER TDRR 27888 DR. R Silver CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR. CHK CAP APPD	/66	
AC	CHANGED PER TDRR 27884 DR CHK APPD		

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	REF NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092 0104095	ECP-75	N/A	8104169	2016313-011												X		
					N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

Ⓣ THIS SHEET ADDED

8104002 AC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 1/7/66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/1/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEX.

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AC

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707	—	
Z	CHANGED PER TDRR 27888 DR R. Schur CHK APPD	7/26/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK G. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Battist CHK APPD	7/27/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK G. Kupfer APPD	8/1/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28MAR66
CHECKED
APPROVAL 3/21/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AC

8104002 AC

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	3/24/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK APPD	3/28/66	
AC	CHANGED PER TDRR 27884 DR J. Helling CHK APPD	4/1/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					

Ⓐ THIS SHEET ADDED

8104002 AC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

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APPLICATION	

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL B. O'Bryant 4/12/66
APPROVAL
NASA APPROVAL 4/1/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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8104002 AD

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W32 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104081	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104081	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	[illegible]
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD [illegible]	11/12/65	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD [illegible]	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	[illegible]/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
T	CHANGED PER TDRR 26868 DR G.J. Binn CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD [illegible]	6/16/66	[illegible]
Z	CHANGED PER TDRR 27888 DR [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	[illegible]/66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK [illegible] APPD	[illegible]/66	[illegible]
AD	CHANGED PER TDRR 28842 DR [illegible] CHK G. [illegible]	[illegible]/66	[illegible]

Ⓙ REPLACES REV H WITH CHANGE

8104002 AD

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A. J. Marrero DATE 8 Jul '65
CHECKED D. Fragione 13 Jul 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 5

8104002 AD

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24224	[illegible]
N	CHANGED PER TDRR 25704 DR CHK APPD	[illegible]
P	CHANGED PER TDRR 25780 DR CHK APPD	[illegible]
R	CHANGED PER TDRR 26685 DR CHK APPD	[illegible]
S	CHANGED PER TDRR 26675 DR CHK APPD	[illegible]
T	CHANGED PER TDRR 26363 DR CHK APPD	[illegible]
U	CHANGED PER TDRR 27329 DR CHK APPD	[illegible]
V	CHANGED PER TDRR 27441 DR CHK APPD	[illegible]
W	CHANGED PER TDRR 27706 DR CHK APPD	[illegible]
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	[illegible]
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Holley CHK APPD	[illegible]
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]
AC	CHANGED PER TDRR 27884 DR CHK APPD	[illegible]
AD	CHANGED PER TDRR 28042 DR CHK	[illegible]

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE, APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W., 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

(M) ~~THIS SHEET~~ ADDED

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AD

8104002 AD

SYM	DESCRIPTION	DATE	APPROVED
T	~~THIS SHEET ADDED PER~~ TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED		
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED		
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D.		
Y	CHANGED PER TDRR 27707 DR CHK C. APPD P.E.D		
Z	CHANGED PER TDRR 27888 DR. R CHK APPD		
AA	CHANGED PER TDRR 27890 DR CHK APPD		
AB	CHANGED PER TDRR 27886 DR CHK APPD		
AC	CHANGED PER TDRR 27884 DR CHK APPD		
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK		

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER REF NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5,8,10,11	0104086	S.O.W. 5.2.4.2(1)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

Ⓣ THIS SHEET ADDED

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN P. DATE 17 Feb 66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/2/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AD

8104002 AD

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27787	—	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. CHK A. APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD		
AC	CHANGED PER TDRR 27884 DR J. CHK A. APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A.	8/4/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER	4,5,6,7,8			1020341		2014042-021	X													
	TEST SET	9,11,12,14	0104087	S.O.W. 5.2.4.2	1014142	8104132	2014039-011	X													
		15,16,18,19			1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-031	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECT-	2 THRU	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
	ION KIT	9, 11, 13			1020307		2014254-021								X						
	G&N TEST	14, 15			1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2015360-011								X						

Ⓨ THIS SHEET ADDED

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES
.XX .XXX ±
± ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 MAR 66
CHECKED
APPROVAL 3/1/66
APPROVAL
APPROVAL 3/1/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST,
APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002

SCALE NONE WT SHEET 4 OF 5

8104002 AD

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/21/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR Roberts CHK	8/4/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104038	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												

(AA) THIS SHEET ADDED.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AD

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104002 AE

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	
K	CHANGED PER TDRR 22895 DR CHK APPD	[illegible]	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD	[illegible]	
N	CHANGED PER TDRR 25104 DR CHK	[illegible]/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	[illegible]/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	[illegible]	
S	CHANGED PER TDRR 26675 DR CHK APPD	[illegible]	
T	CHANGED PER TDRR [illegible] DR G.J. Binn CHK APPD	[illegible]/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	[illegible]/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	[illegible]	
W	CHANGED PER TDRR 27706 DR CHK APPD	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	[illegible]/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. Halley CHK APPD	[illegible]/66	
AB	CHANGED PER TDRR 27886 DR. CHK APPD	[illegible]/66	
AC	CHANGED PER TDRR [illegible] DR J. Halley CHK APPD	[illegible]/66	
AD	CHANGED PER TDRR [illegible] DR CHK	[illegible]/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	[illegible]/66	

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. Mar[illegible] DATE 8 Jul '65
CHECKED D. Frazier 13 Jul 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 5

8104002 AE

8104002 AE

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeVreenia APPD P.C.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.C.D	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK APPD P.C.D	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.C.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK APPD P.C.D	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.C.D		
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD P.C.D	6/14/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. Halley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Halley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Halley CHK A. Kupfer APPD	8/4/66	

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED 12 Nov 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AE

8104002 AE

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/14/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	23 66	
Y	CHANGED PER TDRR 27707 DR CHK C. APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R CHK APPD	7/ /66	
AA	CHANGED PER TDRR 27890 DR J. CHK G. APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. CHK G.	8/ /66	
AE	CHANGED PER TDRR 28044 DR CHK G. APPD	8/4/66	

Ⓣ THIS SHEET ADDED

8104002 AE

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 17 66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/ /66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AE

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707	—	
Z	CHANGED PER TDRR 27888 DR R. Schmer CHK APPD	7/-/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK G. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Battist CHK APPD	7/27/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK G. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR Roberts CHK G. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK G. Kupfer APPD	8/4/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	RIB NO.	AUTHORIZATION	DRAWING NUMBER EXI MODIF	RPR NO.	NEW P/N	VER TEST SET	ATION CONSOLE	UTER SIMULATOR	BRATION CONSOLE	DSKY PED MT	ING CONTAINERS	LING FIXTURES	ERCONN KIT G&N TEST	ERCONN KIT S-B SYSTEM TEST	FIXTURE ASSY DSKY	RETROFIT KIT	DING KITS	AUX CAL CONSOLE	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]														

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY [illegible]

8104002 AE

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Battist CHK APPD	7/26/66	
AC	CHANGED PER TDRR 27384 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 23042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28049 DR CHK	9/4/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489 011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104033	ECP-0215	X2014097-011	8109190	2014097-011	X													
					X2014153-011		2019153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

Ⓐ THIS SHEET ADDED

8104002 AE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	WK
K	CHANGED PER TDRR 22895 DR CHK APPD	[illegible] 65	
L	CHANGED PER TDRR 23990 DR CHK C.O. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.O. APPD	[illegible] 65	
N	CHANGED PER TDRR 25104 DR CHK	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.O. APPD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD RED	3/29/66	
T	CHANGED PER TDRR 26868 DR G.J. Binon CHK APPD	4/1/66	
U	CHANGED PER TDRR 27309 DR CHK APPD RED	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.O. APPD RED	4/27/66	
W	CHANGED PER TDRR 27706 DR CHK APPD RED	[illegible] 66	
Y	CHANGED PER TDRR 27707 DR CHK C.O. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD	7/6/66	
AA	CHANGED PER TDRR 27890 DR J. Malloy CHK APPD	7/24/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27864 DR J. Malloy CHK APPD	7/ /66	
AD	CHANGED PER TDRR [illegible] DR CHK	7/3/66	
AE	CHANGED PER TDRR [illegible] DR CHK APPD	7/ /66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	7/5/66	
AG	CHANGED PER TDRR [illegible] DR P. Leonard CHK APPD	8/9/66	

Ⓙ REPLACES REV H WITH CHANGE

8104002 AG

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. Moreno DATE 8 JUL '65
CHECKED D Frazier 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 6

8104002 AG

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24324	
N	CHANGED PER TDRR 25704 DR CHK APPD	
P	CHANGED PER TDRR 25780 DR CHK APPD	
R	CHANGED PER TDRR 26683 DR CHK APPD	
S	CHANGED PER TDRR 26675 DR CHK APPD	
T	CHANGED PER TDRR 26863 DR CHK APPD	/66
U	CHANGED PER TDRR 27329 DR CHK APPD	/66
V	CHANGED PER TDRR 27441 DR CHK APPD	
W	CHANGED PER TDRR 27706 DR CHK APPD	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	/66
Z	CHANGED PER TDRR 27888 DR CHK APPD	
AA	CHANGED PER TDRR 27890 DR CHK APPD	
AB	CHANGED PER TDRR 27886 DR CHK APPD	
AC	CHANGED PER TDRR 27884 DR CHK APPD	
AD	CHANGED PER TDRR 28042 DR CHK	
AE	CHANGED PER TDRR 28043 DR CHK APPD	
AF	CHANGED PER TDRR 28064 DR CHK APPD	/66
AG	CHANGED PER TDRR 28089 DR CHK APPD	

(M) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN
DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AG

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(1)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	[illegible]	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	[illegible]	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD P.E.D	[illegible]	
W	CHANGED PER TDRR 27706 DR CHK APPD C.D.	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C. DeFrancis APPD P.E.D	[illegible]	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. CHK G. APPD	[illegible]	
AB	CHANGED PER TDRR 27886 DR CHK CAP APPD	[illegible]	
AC	CHANGED PER TDRR 27884 DR J. CHK G. APPD	[illegible]	
AD	CHANGED PER TDRR 28042 DR CHK G.	[illegible]	
AE	CHANGED PER TDRR 28044 DR J. CHK G. APPD	[illegible]	
AF	CHANGED PER TDRR 28064 DR CHK APPD R.T.B.	[illegible]	
AG	CHANGED PER TDRR 28084 DR J.P. CHK G. APPD R.T.B.	[illegible]	

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 FEB 66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL D. 3/2/66
APPROVAL 3/2/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N 685

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 9 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AG

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R. Sch... CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Bartlett CHK CAP APPD		
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR J. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X.90	8/9/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT - SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19			1020341		2014042-021	X													
			0104087	S.O.W. 5.2.4.2	1014142	8104132	2014033-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECT- ION KIT G&N TEST	2 THRU 9,11,13 14,15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

Ⓨ THIS SHEET ADDED

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APPLICATION	

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST,
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AG

8104002 AG

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/29/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK Cap APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kyfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kyfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR Moran CHK A. Kyfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR J. Moran CHK Holkam APPD R.T.O.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kyfer APPD R.T.O.	8/3/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104039	ECP-0215	X2014097-011	8104190	2014097-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

Ⓐ THIS SHEET ADDED

8104002 AG

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL 4/7/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AG

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13 Apr 66	W.K.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kufer APPD X.76	8/9/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & 'X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014024-081		X												
					1014404		2014279-011		X												
					1014416		2014308-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												

(AF) THIS SHEET ADDED

8104002 AG

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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APPLICATION	

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 3 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. 13 Apr 66
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE – [illegible]

8104002 AH

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED, MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104081	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104081	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/[illegible]	
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD [illegible]	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD [illegible]	[illegible]	
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	4/4/66	
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD RCD	3/3/66	
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	4/14/66	
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD RCD	4/23/66	
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD [illegible]	4/1/66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD [illegible]	4/14/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD RCD	[illegible]	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD RCD	[illegible]	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD [illegible]	6/16/66	
Z	CHANGED PER TDRR 27888 DR [illegible] CHK [illegible] APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	7/24/66	
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/26/66	
AC	CHANGED PER TDRR 27884 DR [illegible] CHK [illegible] APPD	7/[illegible]/66	
AD	CHANGED PER TDRR 28042 DR [illegible] CHK [illegible]	8/3/66	
AE	CHANGED PER TDRR 28044 DR [illegible] CHK [illegible] APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD X13	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK [illegible] APPD [illegible]	8/9/66	
AH	CHANGED PER TDRR 28090 DR [illegible] CHK [illegible] APPD. X13	8/10/66	

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 8 Jul '65
CHECKED D [illegible] 13 Jul '65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 6

8104002 AH

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24234	[illegible]
N	CHANGED PER TDRR 25704 DR [illegible] CHK A. Kaplan APPD [illegible]	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C. DeFreminis APPD RCD	[illegible]
R	CHANGED PER TDRR 26683 DR D. Bellinger CHK [illegible] APPD [illegible]	[illegible]/66
S	CHANGED PER TDRR 26675 DR [illegible] CHK A. Kaplan APPD RCD	[illegible]
T	CHANGED PER TDRR 26863 DR A. J. Brown CHK [illegible] APPD RCD	[illegible]/66
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD RCD	[illegible]/66
V	CHANGED PER TDRR 27441 DR [illegible] CHK C. DeFreminis APPD RCD	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD RCD	[illegible]
Y	[illegible] DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66
Z	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kaplan APPD	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kaplan APPD	[illegible]
AD	CHANGED PER TDRR 28042 DR [illegible] CHK A. Kaplan	[illegible]
AE	CHANGED PER TDRR 28049 DR [illegible]	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD R.T.C.	[illegible]
AG	CHANGED PER TDRR 28084 DR J.P. [illegible] CHK A. Kaplan APPD [illegible]	[illegible]
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kaplan APPD RTC	[illegible]/66

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL C. [illegible]
MIT APPROVAL W. Rufe [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 2 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016315-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	[illegible]	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD P.E.D	[illegible]	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C. APPD P.E.D	[illegible]	
Z	CHANGED PER TDRR 27888 DR. R. CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. CHK A. APPD	[illegible]	
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]	
AC	CHANGED PER TDRR 27884 DR CHK A. APPD	[illegible]	
AD	CHANGED PER TDRR 28042 DR S. CHK A.	[illegible]	
AE	CHANGED PER TDRR 28044 DR J. CHK A. APPD	[illegible]	
AF	CHANGED PER TDRR 28064 DR CHK APPD	[illegible]	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. APPD	8/3/66	
AH	CHANGED PER TDRR 28090 DR CHK A. APPD	[illegible]	

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 FEB 66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/4/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AH

8104002 AH

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. [illegible] CHK A. [illegible] APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR P. [illegible] CHK [illegible] APPD	7/2?/66	
AC	CHANGED PER TDRR 27884 DR J. [illegible] CHK A. [illegible] APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR J. Roberts CHK A. [illegible]	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. [illegible] CHK A. [illegible] APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD K.T.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. [illegible] APPD K.T.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. [illegible] APPD K.T.B.	8/10/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014238		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 28 MAR 66
CHECKED [illegible]
APPROVAL [illegible] 3/4/66
APPROVAL
APPROVAL [illegible] 3/3/66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 4-7-66
MIT APPROVAL [illegible] 4/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AH

8104002 AH

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104033	ECP-0215	X2014097-011	8104190	2014097-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. P. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Halley CHK A. Kyfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kyfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR Maury CHK A. Kyfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR J. Mory CHK Holkam APPD L.T.O.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kyfer APPD L.T.O.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kyfer APPD. LTO	8/10/66	

AA THIS SHEET ADDED

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/2/66
APPROVAL
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AH

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064		
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kufer APPD	8/3/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK G. Kufer APPD	8/10/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014024-021		X												
					1014404		2014279-011		X												
					1014416		2014302-011		X												
					1014453		2014272-011		X												
					1014372		2014354		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014045-011		2014045-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014096-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

ⒶⒻ THIS SHEET ADDED

8104002 AH

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LIST OF MATERIALS

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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL W Kupfer 13 Apr 66
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 6

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

[illegible]

8104002 AJ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STPAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104081	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104081	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/5/[illegible]	
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD [illegible]	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD [illegible]	[illegible]	
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	[illegible]/66	
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	
Y	CHANGED PER TDRR 27757 DR [illegible] CHK C.D. APPD [illegible]	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	7/2[illegible]/66	
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	
AC	CHANGED PER TDRR 27384 DR [illegible] CHK [illegible] APPD	[illegible]/66	
AD	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible]	[illegible]/66	
AE	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD	[illegible]/66	
AF	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	
AG	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD [illegible]	8/9/66	
AH	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD	[illegible]/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	

8104002 AJ

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON

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LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 8 Jul 65
CHECKED D. [illegible] 13 Jul 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 7

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104125	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25704 DR CHK A. Kupfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeGreenia APPD P.C.D.	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Bellinger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Biron CHK APPD P.E.D.	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D.	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeGreenia APPD P.E.D.	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D.	66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD P.E.D.	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. Silver CHK APPD	7/1/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J. P. Leonard CHK A. Kupfer APPD L.F.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.F.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.F.B.	8/12/66	

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL 23 Nov
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 2 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343 1020343-021	8104086	2014014-011					X									
					1020194		2014002-011					X									
					1020188 1020435		2014281					X									
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011 1006229	8104161	2016316-011 1006422						X								
					2016312-011 1006231		2016316-011 1006422						X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	7/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	7/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D		
Y	CHANGED PER TDRR 27707 DR CHK C DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/26/66	
AC	CHANGED PER TDRR 27884 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. APPD L.F.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR L Brown CHK A. APPD L.F.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C DeGreenia APPD L.F.B	8/12/66	

Ⓣ THIS SHEET ADDED

8104002 AJ

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LIST OF MATERIALS

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17FEB66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/2/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AJ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9,11,13 14,15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R CHK APPD	7/26/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR J. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X.90	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK A. Kupfer APPD X90	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreemio APPD X.70	8/4/66	

Ⓨ THIS SHEET ADDED

8104002 AJ

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LIST OF MATERIALS

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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28MAR66
CHECKED
APPROVAL 3/21/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AJ

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Halley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 23042 DR Stobert CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR Young CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR J Moy CHK Wolkam APPD L.7.0.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.7.S	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A Kupfer APPD. L.7.S	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.D. APPD L.7.S	8/12/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014041-011	8104190	2014041-011	X													
					X2014153-011		2019153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

(AA) THIS SHEET ADDED

MASTER

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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL B. O'Bryant 4/7/66
APPROVAL
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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CODE IDENT NO. 49956
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NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AJ

8104002 AJ

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13 Apr 66	W.K.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD K.7.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD K.7.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CR Fuller CHK C. DeGreena APPD K.7.B	8/31/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & "X" CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					[illegible]		[illegible]		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014024-021		X												
					1014404		2014279-011		X												
					1014416		2014308-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014095-011		2014095-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014046-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

AF THIS SHEET ADDED

8104002 AJ

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

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TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31MAR66
CHECKED 31MAR66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AJ

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 28068		

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTER-CONNECTION SET, "X" CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						

Ⓐ THIS SHEET ADDED

8104002 AJ

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AK

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TORR 21350	4/5/6	GK
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	10 Oct 65	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.O. APPD [illegible]	11/12/65	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.O. APPD [illegible]	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	4/4/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.O. APPD PCD	4/9/66	[illegible]
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	4/14/66	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD PCD	4/22/66	[illegible]
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD [illegible]	4/?/66	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD PED	5/11/66	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.O. APPD PED	5/2?/66	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD PED	[illegible] 66	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.O. APPD [illegible]	6/12/66	[illegible]
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	7/27/66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK [illegible] APPD	8/1/66	[illegible]
AD	CHANGED PER TDRR 28042 DR [illegible] CHK G. Kupfer	8/3/66	[illegible]
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK [illegible] APPD	8/4/66	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD [illegible]	8/5/66	[illegible]
AG	CHANGED PER TDRR 28054 DR J.P. Leonard CHK [illegible] APPD [illegible]	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR W. [illegible] CHK G. [illegible] APPD [illegible]	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD [illegible]	8/1?/66	[illegible]
AK	CHANGED PER TDRR 29055 [illegible]	8/22/66	[illegible]

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 8 JUL '65
CHECKED D. [illegible] 13 JUL '65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 7

8104002 AK

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X			REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X										REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X										
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X								
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104065	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X										
					1014087		2016333-011				X										
					1014216		2016332-011				X										
					1014076		2016330-011				X										
					1020081		2016331-011				X										
					1014289		2014269-011				X										
					1014041		2014204-011				X										
					1006875		1006875-002				X										
					1014303-4		1014303-6				X										
					1006882-1		1006437-1				X										
					1014001-7		2014080-011				X										
					1014001-1		2014080-061				X										
					1014001-6		2014080-081				X										
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X									
					1020429-011		1020436-011					X									
					1020432		1020435					X									
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X							

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/65	B.A.S.
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeGreenia APPD P.E.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Bélanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.E.D	3/22/66	
T	CHANGED PER TDRR 26863 DR A.J. Bisson CHK APPD P.E.D	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	5/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeGreenia APPD P.E.D	5/24/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	6/23/66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/20/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Holley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD K.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR G.P. Leonard CHK A. Kupfer APPD K.F.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. K.F.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD K.F.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD J.D.F	8/31/66	

8104002 AK

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12/10/65
CHECKED 12 Nov 65
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL 23 Nov
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 8104002
SCALE NONE | WT | SHEET 2 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

8104002 AK

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4. 2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020189		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092 0104095	ECP-75	N/A	8104169	2016313-011												X		
					N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	5/24/66	
W	CHANGED PER TDRR 27706 DR CHK C. Haywood APPD P.E.D	23 66	
Y	CHANGED PER TDRR 27707 DR CHK C. DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R. Sibner CHK APPD	7/10/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD R.T.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD R.T.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR L. Brown CHK A. Kupfer APPD R.T.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD R.T.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	

Ⓣ THIS SHEET ADDED

8104002 AK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 FEB 66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AK

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 3,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341		2014042-021	X													
					1014142	8104132	2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014224-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020266		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECT-ION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J Kelley CHK A. Kupfer APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J Kelley CHK A Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J Kelley CHK A Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.F.B.	8/17/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD L.F.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreemia APPD L.F.B.	8/4/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreemia APPD L.D.F.	8/23/66	

Ⓨ THIS SHEET ADDED

8104002 AK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28MAR66
CHECKED
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/3/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AK

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28049 DR Moran CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR J. Moran CHK Holtkamp APPD R.T.O.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD R.T.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. R.T.B.	8/17/66	
AJ	CHANGED PER TDRR 28068 DR CK Fuller CHK C. DeGreenia APPD R.T.B.	8/17/66	
AK	CHANGED PER TDRR 29055 DR CA Prestor CHK C. DeGreenia APPD R.T.B.	8/23/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					~~1020312-011~~											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	010405c	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104093	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

(AA) THIS SHEET ADDED

8104002 AK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN Tuzzeaux DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL P. Garrin 7 APR 66
APPROVAL B. O'Bryant 4/7/66
APPROVAL
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL 9/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AK

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13 April	WK.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD 8.76	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD 8.70	8/10/66	
AJ	CHANGED PER TDRR 28068 DR B.F. Fuller CHK C. DeFreeman APPD R.7.B	8/2/66	
AK	CHANGED PER TDRR 29055 DR C. Austin CHK C. DeFreeman APPD	8/23/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & "X" CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.9.2	1020342	8104136	2014029-081		X												
					1014404		2014279-011		X												
					1014416		2014308-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014091-011		2014091-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014095-011		2014095-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014036-011		2014096-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

(AF) THIS SHEET ADDED

8104002 AK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

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TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AK

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 28068		
AK	CHANGED PER TDRR 29055 DR CHK C. De APPD	8/23/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTERCONNECTION SET, X CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					[illegible]		[illegible]								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													

Ⓐ THIS SHEET ADDED

8104002 AK

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL 4/16/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002
SCALE NONE	WT	SHEET 7 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104002 AL

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 2135[illegible]	[illegible]	[illegible]
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kiley CHK C.D. APPD [illegible]	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	1/14/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD [illegible]	2/3/66	[illegible]
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	3/14/66	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD [illegible]	3/23/66	[illegible]
T	CHANGED PER TDRR 26868 DR G.J. [illegible] CHK [illegible] APPD [illegible]	4/1/66	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD [illegible]	4/1/66	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD [illegible]	5/16/66	[illegible]
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	[illegible]	[illegible]
AB	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AC	CHANGED PER TDRR 2789[illegible] DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AD	CHANGED PER TDRR [illegible] DR [illegible]	[illegible]	[illegible]
AE	CHANGED PER TDRR 28[illegible]44 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AF	CHANGED PER TDRR 2806[illegible] DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
AG	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD [illegible]	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR [illegible] CHK [illegible] APPD [illegible]	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
AL	CHANGED PER TDRR 29800 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

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DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

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RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 8 JUL 65
CHECKED D Frazier 13 JUL 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 7

8104002 AL

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24224	[illegible]
N	CHANGED PER TDRR 25104 DR CHK APPD	[illegible]
P	CHANGED PER TDRR 25780 DR CHK APPD P.C.D.	[illegible]
R	CHANGED PER TDRR 26683 DR CHK APPD	[illegible]
S	CHANGED PER TDRR 26675 DR CHK APPD P.C.D.	[illegible]
T	CHANGED PER TDRR 26863 DR CHK APPD P.C.D.	[illegible]
U	CHANGED PER TDRR 27329 DR CHK APPD P.C.D.	[illegible]
V	CHANGED PER TDRR 27441 DR CHK APPD P.C.D.	[illegible]
W	CHANGED PER TDRR 27706 DR CHK APPD P.C.D.	[illegible]
Y	CHANGED PER TDRR 21107 DR CHK C.D. APPD	[illegible]
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Halley CHK APPD	[illegible]
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]
AC	CHANGED PER TDRR 27884 DR CHK APPD	[illegible]
AD	CHANGED PER TDRR 28042 DR CHK	[illegible]
AE	CHANGED PER TDRR 28044 DR CHK APPD	[illegible]
AF	CHANGED PER TDRR 28064 DR CHK APPD	[illegible]
AG	CHANGED PER TDRR 28084 DR CHK APPD	[illegible]
AH	CHANGED PER TDRR 28090 DR CHK APPD	[illegible]
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD	[illegible]
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	[illegible]
AL	CHANGED PER TDRR 29800 DR CHK C. DeGreenia APPD	[illegible]

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AL

8104002 AL

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(1)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	~~THIS SHEET ADDED PER TDRR 26863~~	[illegible]	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD P.E.D	[illegible]	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD PED	[illegible]	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD C.E.D.	[illegible]	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C. DeGrenia APPD P.E.D	[illegible]	[illegible]
Z	CHANGED PER TDRR 27888 DR. R. [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AA	CHANGED PER TDRR.27890 DR J. Riley CHK A. [illegible] APPD	[illegible]	[illegible]
AB	CHANGED PER TDRR 27886 DR C. [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AC	CHANGED PER TDRR 27884 DR J. [illegible] CHK A. [illegible] APPD	[illegible]	[illegible]
AD	CHANGED PER TDRR 28042 DR [illegible] CHK A. [illegible]	[illegible]	[illegible]
AE	CHANGED PER TDRR 28044 DR J. [illegible] CHK A. [illegible] APPD	[illegible]	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD K.7.B	[illegible]	[illegible]
AG	CHANGED PER TDRR 28084 DR J.P. [illegible] CHK A. [illegible] APPD K.7.B	[illegible]	[illegible]
AH	CHANGED PER TDRR 28090 DR [illegible] CHK A. [illegible] APPD K.7.B	[illegible]	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeGrenia APPD K.7.B	[illegible]	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeGrenia APPD [illegible]	[illegible]	[illegible]
AL	CHANGED PER TDRR 29800 DR. C. [illegible] CHK C. DeGrenia APPD K.7.B	[illegible]	[illegible]

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. [illegible] DATE [illegible]
CHECKED [illegible] 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/4/66
APPROVAL [illegible] 3/1/66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AL

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK- NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT - SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016354-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27887		
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kufer APPD	7/27/66	[illegible]
AB	CHANGED PER TDRR 27886 DR P. Bettert CHK [illegible] APPD	[illegible]	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kufer APPD	8/1/66	[illegible]
AD	CHANGED PER TDRR 28042 DR J. Roberts CHK A. Kufer	8/3/66	[illegible]
AE	CHANGED PER TDRR 28044 DR J. Keller CHK A. Kufer APPD	8/4/66	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK Walkavia APPD R.T.B.	8/5/66	[illegible]
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kufer APPD [illegible]	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kufer APPD [illegible]	8/19/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeTreemia APPD [illegible]	[illegible]/66	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeTreemia APPD [illegible]	[illegible]/66	[illegible]
AL	CHANGED PER TDRR 29800 DR. P. Bettert CHK C. DeTreemia APPD [illegible]	[illegible]/66	[illegible]

Ⓨ THIS SHEET ADDED

8104002 AL

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 28 MAR 66
CHECKED [illegible]
APPROVAL [illegible] 3/1/66
APPROVAL
APPROVAL [illegible] 3/1/66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 4-7-66
MIT APPROVAL [illegible] 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AC

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006669-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2019153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. CHK APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. CHK APPD.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. APPD	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. APPD	9/13/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	9/27/66	

ⒶⒶ THIS SHEET ADDED

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/12/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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SCALE NONE
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SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AD

8104002 AL

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13 Apr 66	JK.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD K.T.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD K.T.B.	8/ /66	
AJ	CHANGED PER TDRR 28068 DR CKF Fuller CHK C. DeFreena APPD K.T.B.	8/ /66	
AK	CHANGED PER TDRR 29055 DR C.R. Battist CHK C. DeFreena APPD K.T.B.	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeFreena APPD K.T.B.	8/29/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 6	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014029-021		X												
					1014404		2014279-011		X												
					1014416		2014302-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014367		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014045-011		2014045-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014174		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014046-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

(AF) THIS SHEET ADDED

8104002 AL

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN Mycrenny DATE 30 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Kiefer
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AL

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 28068	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK C.DeYreania APPD	9/23/66	
AL	CHANGED PER TDRR 29800 DR CHK APPD	9/27/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
39	G&N INTER-CONNECTION SET, 'X' CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													

AJ THIS SHEET ADDED

8104002 AL

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AM

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312.									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	[illegible]
K	CHANGED PER TDRR 22895 DR CHK APPD	[illegible]	[illegible]
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	[illegible]	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR CHK	[illegible]	[illegible]
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	[illegible]	[illegible]
R	CHANGED PER TDRR 26683 DR CHK APPD	[illegible]	[illegible]
S	CHANGED PER TDRR 26675 DR CHK APPD	[illegible]	[illegible]
T	CHANGED PER TDRR 26868 DR CHK APPD	[illegible]	[illegible]
U	CHANGED PER TDRR 27329 DR CHK APPD	[illegible]	[illegible]
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	[illegible]	[illegible]
W	CHANGED PER TDRR 27706 DR CHK APPD	[illegible]	[illegible]
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	[illegible]	[illegible]
Z	CHANGED PER TDRR 27888 DR A. Selber CHK APPD	[illegible]	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK APPD	[illegible]	[illegible]
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]	[illegible]
AC	CHANGED PER TDRR 27884 DR CHK APPD	[illegible]	[illegible]
AD	CHANGED PER TDRR 28?42 DR CHK	[illegible]	[illegible]
AE	CHANGED PER TDRR 28044 DR CHK APPD	[illegible]	[illegible]
AF	CHANGED PER TDRR 28004 DR CHK APPD	[illegible]	[illegible]
AG	CHANGED PER TDRR 28064 DR P. Leonard CHK APPD	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR CHK APPD.	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR CHK C.D. APPD	[illegible]	[illegible]
AK	CHANGED PER TDRR 29055 DR CHK C.D. APPD	[illegible]	[illegible]
AL	CHANGED PER TDRR [illegible] DR CHK C.D. APPD	[illegible]	[illegible]
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	[illegible]

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

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1000000	
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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 Jul '65
CHECKED 13 Jul '65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 7

8104002 AM

8104002 AM

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104065	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24224	[illegible]
N	CHANGED PER TDRR 25704 DR CHK APPD	[illegible]
P	CHANGED PER TDRR 25780 DR CHK C. DeGreenia APPD P.C.D.	[illegible]
R	CHANGED PER TDRR 26683 DR CHK APPD	[illegible]
S	CHANGED PER TDRR 26675 DR CHK APPD P.C.D.	[illegible]
T	CHANGED PER TDRR 26863 DR CHK APPD P.C.D.	[illegible]
U	CHANGED PER TDRR 27329 DR CHK APPD P.C.D.	[illegible]
V	CHANGED PER TDRR 27441 DR CHK C. DeGreenia APPD P.C.D.	[illegible]
W	CHANGED PER TDRR 27706 DR CHK APPD P.C.D.	[illegible]
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	[illegible]
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]
AA	CHANGED PER TDRR 27890 DR CHK APPD	[illegible]
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]
AC	CHANGED PER TDRR 27884 DR CHK APPD	[illegible]
AD	CHANGED PER TDRR 28042 DR CHK	[illegible]
AE	CHANGED PER TDRR 28044 DR CHK APPD	[illegible]
AF	CHANGED PER TDRR 28064 DR CHK APPD	[illegible]
AG	CHANGED PER TDRR 28084 DR CHK APPD	[illegible]
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. APPD	[illegible]
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD	[illegible]
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	[illegible]
AL	CHANGED PER TDRR 29800 DR CHK C. DeGreenia APPD	[illegible]
AM	CHANGED PER TDRR 29884 DR CHK APPD	[illegible]

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SHEET 2 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-11-66	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK A. [illegible] APPD PED	7/7/66	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD PED	[illegible]/66	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD C.E.D.	[illegible]/66	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C. DeGruenia APPD P.E.D	6/26/66	[illegible]
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	7/14/66	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	[illegible]
AB	CHANGED PER TDRR 27886 DR C. Bottket CHK CAP APPD	7/22/66	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	[illegible]/66	[illegible]
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	[illegible]/66	[illegible]
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	[illegible]/66	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD R.T.B.	[illegible]/66	[illegible]
AG	CHANGED PER TDRR 28084 DR J.R. [illegible] CHK A. Kupfer APPD R.T.B.	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR A. Brown CHK A. Kupfer APPD R.T.B.	[illegible]/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeGruenia APPD R.T.B.	[illegible]/17/66	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeGruenia APPD [illegible]	8/3/66	[illegible]
AL	CHANGED PER TDRR 29800 DR C. Bottket CHK C. DeGruenia APPD R.T.B.	8/24/66	[illegible]
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD R.T.B.	8/31/66	[illegible]

Ⓣ THIS SHEET ADDED

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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 FEB 66
CHECKED [illegible] 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

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SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

SYM	DESCRIPTION	DATE	APPROVAL
Y	THIS SHEET ADDED PER TDRR 27797		
Z	CHANGED PER TDRR 27888 DR CHK APPD		
AA	CHANGED PER TDRR 27890 DR CHK APPD	3/24/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD		
AC	CHANGED PER TDRR 27884 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR CHK APPD	8/12/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK APPD		
AK	CHANGED PER TDRR 29055 DR CHK APPD		
AL	CHANGED PER TDRR 29800 DR. CHK APPD		
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT - SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890		
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK APPD		
AC	CHANGED PER TDRR 27884 DR CHK APPD		
AD	CHANGED PER TDRR 28042 DR CHK		
AE	CHANGED PER TDRR 28049 DR CHK		
AF	CHANGED PER TDRR 28064 DR CHK APPD		
AG	CHANGED PER TDRR 28084 DR J.A. Leonard CHK APPD	8/3/66	
AH	CHANGED PER TDRR 28090 DR. CHK APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGruenne APPD		
AK	CHANGED PER TDRR 29055 DR CHK APPD		
AL	CHANGED PER TDRR 29800 DR. CHK APPD		
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	

(AA) THIS SHEET ADDED

8104002 AU

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AM

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13April	WK.
AG	CHANGED PER TDRR 28084 DR E.P. Leonard CHK A. Kupfer APPD R.7.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD R.7.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR C.R. Fuller CHK C. DeTreania APPD R.7.B	8/?/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeTreania APPD R.7.B	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeTreania APPD R.7.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD R.7.B	8/31/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & "X" CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X											
					2014079-011		2014079-021		X											
					X2014341-011		2014341-021		X											
					2014340-011		2014340-021		X											
					2014496-011		2016409-011		X											
					X2014183-011		2016412-011		X											
					2014277		2016401		X											
					X2014178-011		2014178-011		X											
					X2014180-011		2014180-011		X											
					X2014181-011		2014181-011		X											
					X2014184-011		2014184-011		X											
					2014297-011		2014297-021		X											
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014024-021		X											
					1014404		2014279-011		X											
					1014416		2014308-011		X											
					1014453		2014272-011		X											
					1014372		2014354		X											
					1020070		2014371		X											
					1014388		2014079-021		X											
					1020303		2014257-011		X											
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X												
					2014036-011		2014036-021	X												
					2014219-011		2014219-021	X												
					2014228-011		2014228-021	X												
					2014037-011		2014037-021	X												
					2014224-011		2014224-021	X												
					2014229-011		2014229-021	X												
					2014040-011		2014040-021	X												
					2014375-011		2014375-021	X												
					2014467		2016416	X												
					2014377-011		2014377-021	X												
					2014378-011		2014378-021	X												
					2014041-011		2014041-021	X												
					2014352-011		2014352-021	X												
					2014315-011		2014315-021	X												
					2014336-011		2014336-021	X												
					2014045-011		2014045-021	X												
					2014327-011		2014327-021	X												
					2014294-011		2014294-021	X												
					2014179		2016415	X												
					2014366-011		2014366-021	X												
					2014362-011		2014362-021	X												
					2014046-011		2014046-021	X												
					2014275-011		2014275-041	X												
					2014275-021		2014275-051	X												
					2014275-031		2014275-061	X												

Ⓐⓕ THIS SHEET ADDED

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LIST OF MATERIALS

NEXT ASSY	USED ON
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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31MAR66
CHECKED 31MAR66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AM

8104002 AM

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 28068	[illegible]	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeFreemis APPD	7/23/66	
AL	CHANGED PER TDRR 29800 DR. [illegible] CHK C. DeFreemis APPD	7/27/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. [illegible] APPD	8/4/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTER-CONNECTION SET, 'X' CON-FIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014404-011		2014404-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											

AJ THIS SHEET ADDED

8104002 AM

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MATERIAL

NEXT ASSY	USED ON
APPLICATION	

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 16 APR 66
CHECKED [illegible] 18 APR 66
APPROVAL
APPROVAL
APPROVAL [illegible] 4/18/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104002 AN

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY.	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/.	WK
K	CHANGED PER TDRR 22895 DR D. CHK K.A. APPD	10 OCT 65	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD		
N	CHANGED PER TDRR 25104 DR CHK	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	3/23/66	
T	CHANGED PER TDRR 26868 DR CHK APPD	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD	66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD	66	
AA	CHANGED PER TDRR 27890 DR J. Malley CHK APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR. CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Malley CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK G.	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. CHK G. APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. CHK G. APPD.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.D. APPD	8/17/66	
AK	CHANGED PER TDRR 29055 DR CHK C.D. APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK C.D. APPD	66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Malley CHK G. APPD	9/1/66	

Ⓙ REPLACES REV H WITH CHANGE

8104002 AN

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. DATE 8 JUL 65
CHECKED D. 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 7

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeMeenia APPD P.C.D	3/4/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD PED	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Brown CHK APPD PED	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PED		
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD PED	6/6/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battle CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Holley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.F.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. LFB	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeMeenia APPD L.F.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeMeenia APPD L.F.B	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battle CHK C. DeMeenia APPD L.F.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD LFB	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK APPD LFB	9/1/66	

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN DATE 12-1-65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Ruefer 23 Nov
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE ONE
WT
SHEET 2 OF 7

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AN

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(1)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104050	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR E.K. Fuller CHK A. Rozanski APPD P.E.D	7/11/66	
V	CHANGED PER TDRR 27441 DR Tom Lillow CHK C.D. APPD PED	7/22/66	
W	CHANGED PER TDRR 27706 DR P. Bordello CHK C. Hayward APPD P.E.D	23 [illegible] 66	
Y	CHANGED PER TDAR 27707 DR Manning CHK C DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R Sibner CHK Manning APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kyfer APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR P. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kyfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kyfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kyfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK Holbauer APPD X.7.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kyfer APPD X7B	8/9/66	
AH	CHANGED PER TDRR 28090 DR A Brown CHK A. Kyfer APPD X7B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR E.F. Fuller CHK C. DeGreenia APPD X.7.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR C. Pratt CHK C. DeGreenia APPD X7B	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battist CHK C. DeGreenia APPD X7B	8/29/66	
AM	CHANGED PER TDRR 29884 DR Bordello CHK A. Kyfer APPD X7B	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kyfer APPD X7B	9/1/66	

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±   DECIMALS .XXX ±   ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 1/7/66
CHECKED J. Rozanski 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/2/66
NASA APPROVAL
MIT APPROVAL 4/6/66
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AN

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341		2014042-021	X													
					1014142	8104132	2014033-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014214-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020236		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9,11,13 14,15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. CHK A. Kupfer APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. CHK A. Kupfer APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK APPD	8/11/66	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK A. Kupfer APPD	9/1/66	

Ⓨ THIS SHEET ADDED

8104002 A1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL 7/1/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 9/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AN

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489 011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. C. Battiste CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28049 DR CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Holkam APPD L.7.0.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.7.3	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.7.0	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.7.3	8/12/66	
AK	CHANGED PER TDRR 29055 DR CA Pustare CHK C. DeGreenia APPD L.7.7	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C. Battiste CHK C. DeGreenia APPD L.7.3	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.7.3	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD L.7.3	9/1/66	

Ⓐ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL 9/1/66
MIT APPROVAL
MIT APPROVAL 9/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 8104002
SCALE NONE | WT | SHEET 5 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AN

8104002 AN

SYM	DESCRIPTION	DATE	APPROVED
REVISIONS			
AF	THIS SHEET ADDED PER TDRR 28064		WK.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD R.7.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Barnes CHK G. Kupfer APPD R.7.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD R.7.B	8/?/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeGreenia APPD R.7.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK G. Kupfer APPD R.7.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK G. Kupfer APPD R.7.B	9/1/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014029-021		X												
					1019404		2014275-011		X												
					1014416		2014308-011		X												
					1019453		2014272-011		X												
					1019372		2014359		X												
					1020070		2014371		X												
					1019388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014045-011		2014045-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014046-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

Ⓐ THIS SHEET ADDED

8104002 AN

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 9/1/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AN

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 28068		
AK	CHANGED PER TDRR 29055 DR A. Pitata CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. O. Battist CHK C. DeGreenia APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR S. Roberts CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Halley CHK A. Kupfer APPD	9/1/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTER-CONNECTION SET, 'X' CON-FIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													

AJ THIS SHEET ADDED

8104002 AN

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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN May DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL 4/11/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/14/66

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MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

[illegible]

8104002 AR

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020348	8104081	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104081	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	[illegible]
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
L	CHANGED PER TDRR 23998 DR [illegible] CHK C.D. APPD [illegible]	11/12/6-	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD [illegible]	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	[illegible]/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
R	CHANGED PER TDRR 26685 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD, FGD	[illegible]/66	[illegible]
T	CHANGED PER TDRR [illegible] DR G.J. Binn CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
U	CHANGED PER TDRR 27[illegible] DR [illegible] CHK [illegible] APPD FGD	[illegible]/66	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD FGD	[illegible]/66	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD [illegible]	6/[illegible]/66	[illegible]
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	7/12/66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	[illegible]
AC	CHANGED PER TDRR 2788[illegible] DR J. Kelley CHK [illegible] APPD	[illegible]	[illegible]
AD	CHANGED PER TDRR 2804[illegible] DR S. Roberts CHK G. [illegible]	8/3/66	[illegible]
AE	CHANGED PER TDRR [illegible]804[illegible] DR [illegible] CHK [illegible] APPD	8/[illegible]/66	[illegible]
AF	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AG	CHANGED PER TDRR 28084 DR R.P. Leonard CHK [illegible] APPD [illegible]	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR [illegible] CHK [illegible] APPD. [illegible]	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD [illegible]	8/1[illegible]/66	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
AL	CHANGED PER TDRR [illegible] DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
AM	CHANGED PER TDRR 29884 DR [illegible] CHK [illegible] APPD [illegible]	8/30/66	[illegible]
AN	CHANGED PER TDRR 30170 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AP	CHANGED PER TDRR 30[illegible] DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]

8104002 AB

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1000000	
NEXT ASSY	USED ON
APPLICATION	

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MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 8 Jul 65
CHECKED [illegible] 13 Jul 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 7

2007018

SYM	DESCRIPTION	DATE
M	THIS SHEET ADDED PER TDRR 24224	[illegible]
N	CHANGED PER TDRR 25704 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
P	CHANGED PER TDRR 25[illegible] DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
R	CHANGED PER TDRR 26583 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
S	CHANGED PER TDRR 26875 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
T	CHANGED PER TDRR 26863 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
V	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
Z	CHANGED PER TDRR 27888 DR [illegible] CHK [illegible] APPD	[illegible]
AA	CHANGED PER TDRR 27890 DR [illegible] CHK [illegible] APPD	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	[illegible]
AC	CHANGED PER TDRR 27884 DR [illegible] CHK [illegible] APPD	[illegible]
AD	CHANGED PER TDRR 28042 DR [illegible] CHK [illegible]	[illegible]
AE	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
AG	CHANGED PER TDRR 28084 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
AH	CHANGED PER TDRR 28090 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK [illegible] APPD	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK [illegible] APPD	[illegible]
AL	CHANGED PER TDRR 29800 DR [illegible] CHK [illegible] APPD	[illegible]
AM	CHANGED PER TDRR 29884 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]
AN	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD	[illegible]
AP	CHANGED PER TDRR 30547 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

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MATERIAL

NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104037	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	[illegible]	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	[illegible]	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD P.E.D	[illegible]	
W	CHANGED PER TDRR 27705 DR CHK APPD C.E.D.	[illegible]	
Y	CHANGED PER TDRR 27797 DR CHK C DeRoquet APPD P.E.D	[illegible]	
Z	CHANGED PER TDRR 27868 DR CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR CHK APPD	[illegible]	
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]	
AC	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible]	
AD	CHANGED PER TDRR [illegible] DR CHK	[illegible]	
AE	CHANGED PER TDRR 28044 DR CHK APPD	[illegible]	
AF	CHANGED PER TDRR 28064 DR CHK APPD	[illegible]	
AG	CHANGED PER TDRR 28084 DR CHK APPD	[illegible]	
AH	CHANGED PER TDRR 28096 DR CHK APPD	[illegible]	
AJ	CHANGED PER TDRR 28068 DR CHK APPD	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	[illegible]	
AL	CHANGED PER TDRR 29800 DR CHK APPD	[illegible]	
AM	CHANGED PER TDRR 29884 DR CHK APPD	[illegible]	
AN	CHANGED PER TDRR 30170 DR CHK APPD	[illegible]	
AP	CHANGED PER TDRR 30547 DR CHK APPD	[illegible]	

(T) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED 18 FEB 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N 658

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 9 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AP

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT-SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27887		
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR CHK APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]	
AC	CHANGED PER TDRR 27884 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/17/66	
AG	CHANGED PER TDRR 28084 DR CHK APPD	8/19/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD	[illegible]	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	[illegible]	
AL	CHANGED PER TDRR 29800 DR. CHK C. DeGreenia APPD	[illegible]	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR. CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR. CHK APPD	9/2/66	

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AP

8104002 AR

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2019153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	[illegible]	
AB	CHANGED PER TDRR 27886 DR. CHK APPD	[illegible]	
AC	CHANGED PER TDRR 27884 DR. CHK APPD	[illegible]	
AD	CHANGED PER TDRR 28042 DR CHK	8/4/66	
AE	CHANGED PER TDRR 28049 DR CHK	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR CHK APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. CHK APPD	[illegible]	
AJ	CHANGED PER TDRR 28068 DR CHK APPD	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	[illegible]	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	[illegible]	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	[illegible]	
AP	CHANGED PER TDRR 30547 DR CHK APPD	[illegible]	

(AA) THIS SHEET ADDED

8104002 AR

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LIST OF MATERIALS

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AP

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	3 Apr 66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD R.T.B.	8/3/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK G. Kupfer APPD R.T.B.	8/ /66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD R.T.B.	8/ /66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeGreenia APPD R.T.B.	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK G. Kupfer APPD R.T.B.	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK G. Kupfer APPD R.T.B.	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK G. Kupfer APPD R.T.B.	9/ /66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & "X" CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020342	8104136	2014024-081		X												
					1014404		2014279-011		X												
					1014416		2014302-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014045-011		2014045-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014096-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

Ⓐ THIS SHEET ADDED

8104002 AP

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LIST OF MATERIALS

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DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 30 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/18/66
NASA APPROVAL A. G. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AP

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR [illegible]	[illegible]	
AK	CHANGED PER TDRR 29035 DR CHK APPD	7/28/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	7/27/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/4/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	8/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTER-CONNECTION SET, 'X' CON-FIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9,11,12,14, 15,16,18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021		2014268-031														
					2016310-011	8104200	2016310-021									X					
					2014199-011		2014199-021														
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9,11,13, 15 THRU 22	0104070	ECP 0389	2014255-021	8104201	2014255-031														
					2016311-011		2016311-021								X						
					2014137-011		2014137-021														

Ⓐ THIS SHEET ADDED.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 16 APR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO.	SIZE	DRAWING NO.
49956	D	8104002

SCALE NONE WT SHEET 7 OF 7

8104002 AP

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104002 AR

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE
					P/N MODIF	RFK NO.	NEW P/N													
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X										
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X												
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X				
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X					
5	REPLACE CABLE W32 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X								
6	C.T.S. KIT, BLOCK I& 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X												
7	O.C. KIT, BLOCK I& 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X											
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X						
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X									
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X												
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X												
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X						
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X										
					1014099		1014099 MD1			X										
					1014110		1014110 MD1			X										
					1020204		1020204 MD1			X										
					1014090		1014090 MD1			X										
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X												
					1020288-1		1020288-1 MD1	X												
					1020288-2		1020288-2 MD1	X												
					1020288-3		1020288-3 MD1	X												
					1014124		1014124 MD1	X												
					1014160		1014160 MD1	X												
					1020164		1020164 MD1	X												
					1014162		1014162 MD1	X												
					1014163		1014163 MD1	X												
					1014164		1014164 MD1	X												
					1014176		1014176 MD1	X												
					1020356		1020356 MD1	X												
					1020357		1020357 MD1	X												
					1014166		1014166 MD1	X												
					1014167		1014167 MD1	X												
					1014168		1014168 MD1	X												
					1014169		1014169 MD1	X												
					1014177		1014177 MD1	X												
					1020277		1020277 MD1	X												
					1020282		1020282 MD1	X												
					1020283		1020283 MD1	X												
					1020263 MD1		1020263 MD2	X												
					1020267		1020267 MD1	X												
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X										
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X				
		1-6&9	0104052		1020321	8104093	1020428-011									X				
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X								
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X								
		2-8,10,11	0104037		1020330	8104051	1020436-011					X								

SUPERSEDED BY ITEM NO. 19

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21355	4/5/[illegible]	WK
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD	10 OCT 65	
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD	[illegible] 65	
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	4/4/66	
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD	4/4/66	
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD	4/14/66	
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD	4/22/66	
T	CHANGED PER TDRR 26[illegible] DR [illegible] CHK [illegible] APPD	5/4/66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD	5/11/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD	5/24/66	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD	[illegible] 66	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. Silva CHK [illegible] APPD	[illegible] 66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK [illegible] APPD	8/[illegible]/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK G. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. [illegible] CHK [illegible] APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J P. Leonard CHK [illegible] APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK [illegible] APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD	8/17/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C.D. APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR [illegible] CHK C.D. APPD	8/[illegible]/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK [illegible] APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR [illegible] CHK [illegible] APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK [illegible] APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK [illegible] APPD	9/7/66	

① REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 8 JUL '65
CHECKED D. [illegible] 13 JUL '65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST - APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 7

8104002 AR

8104002 AR

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	R Fk NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE, APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104125	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/18/66	
P	CHANGED PER TDRR 25780 DR CHK C. APPD RCD	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD KD	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK APPD RCD	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD RCD	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. APPD RCD	4/23/66	
W	CHANGED PER TDRR 27706 DR CHK APPD RCD	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD RCD	6/14/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battista CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Holley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.T.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.T.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. LTB	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. APPD L.T.B.	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. APPD L.T.B.	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battista CHK C. APPD LTB	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD LTB	8/31/66	
AN	CHANGED PER TDRR 30[illegible] DR J. Holley CHK APPD LTB	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD LTB	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD LTB	9/7/66	

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 12/10/65
CHECKED
APPROVAL
APPROVAL 11/18/65
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AR

8104002 AR

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	REF NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092 0104095	ECP-75	N/A	8104169	2016313-011												X		
					N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	7/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	7/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D		
Y	CHANGED PER TDRR 27707 DR CHK APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD		
AA	CHANGED PER TDRR 27890 DR CHK APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/20/66	
AC	CHANGED PER TDRR 27884 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.T.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR CHK APPD L.T.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD L.T.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK APPD L.T.B	8/12/66	
AK	CHANGED PER TDRR 29055. DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD L.T.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD L.T.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD L.T.B	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD L.T.B	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD L.T.B	9/7/66	

Ⓣ THIS SHEET ADDED

8104002 AR

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 1/7/66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/1/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AR

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104057	S.O.W 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R Selner CHK [illegible] APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J Holling CHK A. Kupfer APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR C Battent CHK [illegible] APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR J Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD R.T.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X.73	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD X73	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeGreenia APPD X.73	8/12/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeGreenia APPD [illegible]	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C Battent CHK C. DeGreenia APPD X73	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD X73	8/31/66	
AN	CHANGED PER TDRR 30170 DR. J Roberts CHK A. Kupfer APPD X73	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK A. Kupfer APPD X73	9/7/66	

Ⓨ THIS SHEET ADDED

8104002 AR

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 28 MAR 66
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL
APPROVAL [illegible] 3/3/66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 4/7/66
MIT APPROVAL [illegible] 9/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AR

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014483-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-021									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014042-011		2014042-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Holkam APPD L.7.0.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.7.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Darrow CHK. A. Kupfer APPD. L.7.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.7.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD L.7.B	8/23/66	
AL	CHANGED PER TDRR 29300 DR. V. Battist CHK C. DeGreenia APPD L.7.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.7.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD L.7.B	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.7.B	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD L.7.B	9/7/66	

Ⓐ THIS SHEET ADDED

8104002 AR

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL 9/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13April66	WK.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.70	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD L70	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CF Gallen CHK C. DeFreenia APPD R.7.B	8/2/66	
AK	CHANGED PER TDRR 29055 DR CR CHK C. DeFreenia APPD L74	8/23/66	
AL	CHANGED PER TDRR 29800 DR P Battist CHK C. DeFreenia APPD R70	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L70	8/31/66	
AN	CHANGED PER TDRR 30170 DR J Roberts CHK A. Kupfer APPD L73	9/1/66	
AP	CHANGED PER TDRR 30547 DR J Roberts CHK A. Kupfer APPD L73	9/7/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD L73	9/7/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & "X" CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2014401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.9.2	1020392	8104136	2014029-021		X												
					1014404		2014279-011		X												
					1014416		2014302-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104058	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014090-011		2014090-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					[illegible]		[illegible]	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014046-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

Ⓐ THIS SHEET ADDED

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LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AR

8104002 AP

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 28068	[illegible]	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. [illegible] APPD [illegible]	8/23/66	
AL	CHANGED PER TDRR 29800 DR. O. [illegible] CHK [illegible] APPD [illegible]	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. [illegible] APPD [illegible]	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. [illegible] APPD [illegible]	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK A. [illegible] APPD [illegible]	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK A. [illegible] APPD [illegible]	9/7/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
39	G&N INTER-CONNECTION SET, X CON-FIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X20144[illegible]-021		20144[illegible]-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014151-011		2014157-011								X						
					X20144[illegible]-011		20144[illegible]-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021 2016310-011 2014199-011	8104200	2014268-031 2016310-021 2014199-021									X					
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021 2016311-011 2014137-011	8104201	2014255-031 2016311-021 2014137-021								X						
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

Ⓐ THIS SHEET ADDED

8104002 AR

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

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NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 15 APR 66
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AS

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

① REPLACES REV H WITH CHANGE

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/[illegible]	LK
K	CHANGED PER TDRR 22895 DR CHK APPD	10 Oct 65	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD	[illegible] 65	
N	CHANGED PER TDRR 25104 DR CHK	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	3/3/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	3/23/66	
T	CHANGED PER TDRR 26868 DR CHK APPD	4/4/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	4/25/66	
W	CHANGED PER TDRR 27706 DR CHK APPD	27 [illegible] 66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. Silver CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK APPD	7/12/66	
AB	CHANGED PER TDRR 27886 DR. CHK APPD	7/20/66	
AC	CHANGED PER TDRR 27984 DR J. Holley CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK G. Kuper	8/3/66	
AE	CHANGED PER TDRR 28074 DR J. CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J P. Leonard CHK APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. CHK APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.D. APPD	8/[illegible]/66	
AK	CHANGED PER TDRR 29055 DR CHK G.D. APPD	[illegible]/66	
AL	CHANGED PER TDRR 29800 DR. CHK C.D. APPD	8/[illegible]/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR. CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK G. APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK APPD	9/14/66	

8104002 AS

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX DECIMALS .XXX ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 JUL 65
CHECKED D. 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002

SCALE NONE WT SHEET 1 OF 7

8104002 AG

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104092	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE, APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/65	
N	CHANGED PER TDRR 25104 DR R. Doms CHK A. Kupfer APPD	1/[illegible]/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeGreenia APPD P.E.D.	3/9/66	
R	CHANGED PER TDRR 26683 DR D. Bellanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.E.D.	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Biron CHK APPD P.E.D.	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D.	5/10/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeGreenia APPD P.E.D.	5/23/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D.	6/66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD P.E.D.	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. Silver CHK APPD	7/21/66	
AA	CHANGED PER TDRR 27890 DR J. Helley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battista CHK APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J. Helley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Helley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J. P. Leonard CHK A. Kupfer APPD L.F.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.F.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.F.B.	8/10/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD L.F.B.	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battista CHK C. DeGreenia APPD L.F.B.	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD L.F.B.	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Helley CHK APPD L.F.B.	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD L.F.B.	9/6/66	
AR	CHANGED PER TDRR 30574 DR B. J. Papia CHK A. Kupfer APPD L.F.B.	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Helley CHK A. Kupfer APPD L.F.B.	9/14/66	

8104002 AE

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12-10-65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Rupp 23 Nov.
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 2 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 A5

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020349-011	8104167	1020349-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR C.H. Fuller CHK S.J. [illegible] APPD P.E.D	7/11/66	
V	CHANGED PER TDRR 27441 DR Tom [illegible] CHK C.D. APPD PED	7/22/66	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD P.E.D	[illegible]/66	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C. DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R. Selner CHK [illegible] APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR [illegible] Battista CHK [illegible] APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD L.T.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.T.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR L. Brown CHK A. Kupfer APPD LTB	8/10/66	
AJ	CHANGED PER TDRR 28068 DR C.H. Fuller CHK C. DeGreenia APPD L.T.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeGreenia APPD LTB	8/23/66	
AL	CHANGED PER TDRR 29800 DR. [illegible] CHK C. DeGreenia APPD LTB	8/24/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD LTB	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD LTB	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD LTB	9/6/66	
AR	CHANGED PER TDRR 30574 DR B. J. Papia CHK A. Kupfer APPD LTB	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD LTB	9/14/66	

Ⓣ THIS SHEET ADDED

8104002 A5

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 FEB 66
CHECKED [illegible] 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AS

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER	4,5,6,7,8			1020341		2014042-021	X													
	TEST SET	9,11,12,14	0104087	S.O.W. 5.2.4.2	1014142	8104132	2014039-011	X													
		15,16,18,19			1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1014929		[illegible]	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECT-ION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					[illegible]		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J CHK APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD R.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. CHK APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. CHK APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeVreeria APPD	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK C. DeVreeria APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK C. DeVreeria APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR S Roberts CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J CHK APPD	9/7/66	

Ⓨ THIS SHEET ADDED

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DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 6
CHECKED
APPROVAL
APPROVAL
APPROVAL 3/ 66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AS

8104002 AS

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 16	0104095	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK [illegible] APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28049 DR [illegible] CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD L.7.0.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L7.3	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A Kupfer APPD. L7.3	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeGreenia APPD L.7.3	8/12/66	
AK	CHANGED PER TDRR 29055 DR C.A. Pietz CHK C. DeGreenia APPD L.7.7	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C. Battist CHK C. DeGreenia APPD L7.3	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD L7.3	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD L7.3	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L7.3	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK A. Kupfer APPD L7.3	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD L7.3	9/14/66	

Ⓐ THIS SHEET ADDED

8104002 A5

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 31 MAR 66
CHECKED [illegible] 31 MAR 66
APPROVAL P. [illegible] 7 APR 66
APPROVAL [illegible] 4/7/66
APPROVAL
NASA APPROVAL [illegible] 4/9/66
MIT APPROVAL [illegible]
MIT APPROVAL [illegible] 9/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AS

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
					P/N MODIF	RFK NO.	NEW P/N													
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT 'X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0323	2014024-011	8104191	2014024-021		X											
					2014079-011		2014079-021		X											
					X2014341-011		2014341-021		X											
					2014340-011		2014340-021		X											
					2014496-011		2016409-011		X											
					X2014183-011		2016412-011		X											
					2014277		2016401		X											
					X2014178-011		2014178-011		X											
					X2014180-011		2014180-011		X											
					X2014181-011		2014181-011		X											
					X2014184-011		2014184-011		X											
					2014297-011		2014297-021		X											
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020342	8104136	2014029-021		X											
					1014404		2014279-011		X											
					1014416		2014308-011		X											
					1014453		2014272-011		X											
					1014372		2014359		X											
					1020070		2014371		X											
					1014388		2014079-021		X											
					1020303		2014257-011		X											
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X												
					2014036-011		2014036-021	X												
					2014219-011		2014219-021	X												
					2014228-011		2014228-021	X												
					2014037-011		2014037-021	X												
					2014224-011		2014224-021	X												
					2014229-011		2014229-021	X												
					2014093-011		2014040-021	X												
					2014375-011		2014375-021	X												
					2014467		2016416	X												
					2014377-011		2014377-021	X												
					2014378-011		2014378-021	X												
					2014091-011		2014091-021	X												
					2014352-011		2014352-021	X												
					2014315-011		2014315-021	X												
					[illegible]		[illegible]	X												
					2014095-011		2014095-021	X												
					2014327-011		2014327-021	X												
					2014294-011		2014294-021	X												
					2014179		2016415	X												
					2014366-011		2014366-021	X												
					2014362-011		2014362-021	X												
					2014046-011		2014096-021	X												
					2014275-011		2014275-041	X												
					2014275-021		2014275-051	X												
					2014275-031		2014275-061	X												

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13 April 66	W.K.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD K.T.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Barnes CHK G. Kupfer APPD K.T.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreena APPD K.T.B.	8/4/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreena APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeFreena APPD K.T.B.	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK G. Kupfer APPD K.T.B.	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK G. Kupfer APPD K.T.B.	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK G. Kupfer APPD K.T.B.	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK G. Kupfer APPD K.T.B.	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK G. Kupfer APPD K.T.B.	9/14/66	

AF THIS SHEET ADDED

8104002 AS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL G. C. METZGER
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AS

SYM	DESCRIPTION	DATE	APPROVED
REVISIONS			
AJ	THIS SHEET ADDED PER TDRR 28968		
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	9/14/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTERCONNECTION SET, 'X' CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9,11,12,14, 15,16,18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021		2014268-031									X					
					2016310-011	8104200	2016310-021														
					2014199-011		2014199-021														
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9,11,13, 15 THRU 22	0104070	ECP 0389	2014255-021	8104201	2014255-031								X						
					2016311-011		2016311-021														
					2014137-011		2014137-021														
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

Ⓐ THIS SHEET ADDED

8104002 AS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 15 APR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 7

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104056	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104081	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/[illegible]	[illegible]
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	10 Oct 65	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD [illegible]	11/12/65	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD [illegible]	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	1/[illegible]/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD [illegible]	4/1/66	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD [illegible]	6/16/66	[illegible]
Z	CHANGED PER TDRR 27888 DR A. [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	7/22/66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	[illegible]
AC	CHANGED PER TDRR 27884 DR [illegible] CHK [illegible] APPD	8/1/66	[illegible]
AD	CHANGED PER TDRR 28042 DR [illegible] CHK G. [illegible]	8/3/66	[illegible]
AE	CHANGED PER TDRR 28044 DR [illegible] CHK [illegible] APPD	8/4/66	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD [illegible]	8/5/66	[illegible]
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK [illegible] APPD [illegible]	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR W. [illegible] CHK [illegible] APPD [illegible]	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
AL	CHANGED PER TDRR [illegible] DR [illegible] CHK C.D. APPD [illegible]	[illegible]	[illegible]
AM	CHANGED PER TDRR 29884 DR [illegible] CHK [illegible] APPD [illegible]	8/31/66	[illegible]
AN	CHANGED PER TDRR 30170 DR J. [illegible] CHK [illegible] APPD [illegible]	9/1/66	[illegible]
AP	CHANGED PER TDRR 30547 DR [illegible] CHK [illegible] APPD [illegible]	9/6/66	[illegible]
AR	CHANGED PER TDRR 30574 DR [illegible] CHK G. [illegible] APPD [illegible]	9/7/66	[illegible]
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK [illegible] APPD [illegible]	9/14/66	[illegible]
AT	CHANGED PER TDRR 30884 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]

8104002 AT

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A. J. [illegible] DATE 8 JUL '65
CHECKED D. [illegible] 13 JUL '65
APPROVAL [illegible] 7-14-65
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 8

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	P FK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25704 DR R. Drummond CHK A. Kupfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR R. Drummond CHK C. DeFreenia APPD P.C.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Bellanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.C.D	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Biron CHK APPD P.E.D	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeFreenia APPD P.E.D	4/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD P.C.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/.66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Williamson APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.F.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.F.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreenia APPD L.F.B.	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreenia APPD L.F.B.	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK C. DeFreenia APPD L.F.B.	8/23/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.F.B.	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Kelley CHK APPD L.F.B.	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.F.B.	9/1/66	
AR	CHANGED PER TDRR 30574 DR B. J. Papia CHK A. Kupfer APPD L.F.B.	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.F.B.	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD L.F.B.	10/1/66	

Ⓜ THIS SHEET ADDED

8104002 AT

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 Nov 65
CHECKED 12 Nov 65
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	7/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	7/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D.	23 Jun 66	
Y	CHANGED PER TDRR 27707 DR CHK C DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R Silver CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.T.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.T.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK A. Kupfer APPD L.T.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.T.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD L.T.B	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK C. DeGreenia APPD L.T.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.T.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD L.T.B	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.T.B	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD L.T.B	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.T.B	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD L.T.B	10/8/66	

Ⓣ THIS SHEET ADDED

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DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 FEB 66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/ /66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104037	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		[illegible]	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		[illegible]	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		[illegible]								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R. Schum CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.F.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.F.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.F.B.	8/11/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD L.F.B.	8/23/66	
AL	CHANGED PER TDPR 29800 DR. C. Battist CHK C. DeGreenia APPD L.F.B.	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.F.B.	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD L.F.B.	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD L.F.B.	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.F.B.	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD	10/8/66	

Ⓨ THIS SHEET ADDED

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LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002

SCALE NONE WT SHEET 4 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104085	S.Q.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014034-021		2014034-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-011		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	Jul
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK CAP APPD	7/28/66	Jul
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	Jul
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	Jul
AE	CHANGED PER TDRR 28049 DR Maney CHK A. Kupfer	8/4/66	Jul
AF	CHANGED PER TDRR 28064 DR J. Moy CHK Holkam APPD L.7.0.	8/5/66	Jul
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.7.B	8/9/66	Jul
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.7.B	8/10/66	Jul
AJ	CHANGED PER TDRR 28058 DR A. Fuller CHK C. DeGreenia APPD L.7.B	8/11/66	Jul
AK	CHANGED PER TDRR 29055 DR C. A. Lucatu CHK C. DeGreenia APPD L.7.7	8/23/66	Jul
AL	CHANGED PER TDRR 29800 DR. C. Battist CHK C. DeGreenia APPD L.7.B	8/29/66	Jul
AM	CHANGED PER TDRR 29884 DR Cudell CHK A. Kupfer APPD L.7.B	8/31/66	Jul
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD L.7.B	9/1/66	Jul
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.7.B	9/6/66	Jul
AR	CHANGED PER TDRR 30574 DR B. J. Papia CHK A. Kupfer APPD L.7.B	9/7/66	Jul
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD L.7.B	9/14/66	Jul
AT	CHANGED PER TDRR 30884 DR J. Gordon CHK A. Kupfer APPD L.7.7	10/4/66	Jul

(AA) THIS SHEET ADDED

8104002 AT.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/12/66
APPROVAL
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL 4/…

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002
SCALE NONE	WT	SHEET 5 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13 Apr 66	W.K.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD R.T.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD R.T.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD R.T.B.	8/?/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battista CHK C. DeGreenia APPD R.T.B.	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD R.T.B.	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD R.T.B.	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD R.T.B.	9/1/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD R.T.B.	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD R.T.B.	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK APPD F.D.?	11/8/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & "X" CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X											
					2014079-011		2014079-021		X											
					X2014341-011		2014341-021		X											
					2014340-011		2014340-021		X											
					2014496-011		2016409-011		X											
					X2014183-011		2016412-011		X											
					2014277		2016421		X											
					X2014178-011		2014178-011		X											
					X2014180-011		2014180-011		X											
					X2014181-011		2014181-011		X											
					X2014184-011		2014184-011		X											
					2014297-011		2014297-021		X											
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020342	8104136	2014039-021		X											
					1014404		2014279-011		X											
					1014416		2014308-011		X											
					1014453		2014272-011		X											
					1014372		2014339		X											
					1020070		2014371		X											
					1014388		2014079-021		X											
					1020303		2014257-011		X											
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X												
					2014036-011		2014036-021	X												
					2014219-011		2014219-021	X												
					2014228-011		2014228-021	X												
					2014037-011		2014037-021	X												
					2014224-011		2014224-021	X												
					2014229-011		2014229-021	X												
					2014090-011		2014090-021	X												
					2014375-011		2014375-021	X												
					2014467		2016416	X												
					2014377-011		2014377-021	X												
					2014378-011		2014378-021	X												
					2014041-011		2014041-021	X												
					2014352-011		2014352-021	X												
					2014315-011		2014315-021	X												
					2014336-011		2014336-021	X												
					[illegible]		[illegible]	X												
					2014327-011		2014327-021	X												
					2014294-011		2014294-021	X												
					2014179		2016415	X												
					2014366-011		2014366-021	X												
					2014362-011		2014362-021	X												
					2014046-011		2014046-021	X												
					2014275-011		2014275-041	X												
					2014275-021		2014275-051	X												
					2014275-031		2014275-061	X												

Ⓐ THIS SHEET ADDED

8104002 AT

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
					P/N MODIF	RFK NO.	NEW P/N													
39	G&N INTERCONNECTION SET, 'X' CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X					
					[illegible]		[illegible]								X					
					X2014462-011		2014462-011								X					
					[illegible]		[illegible]								X					
					X2014462-031		2014462-031								X					
					X2014484-011		2014484-011								X					
					X2014137-011		2014137-011								X					
					X2014483-011		2014483-011								X					
					X2014482-011		2014482-011								X					
					X2016334-011		2016334-011								X					
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X												
					2014036-021		2014036-031	X												
					2014219-021		2014219-031	X												
					2014228-021		2014228-031	X												
					2014041-021		2014041-031	X												
					2014336-021		2014336-031	X												
					2014046-021		2014046-031	X												
					2014045-021		2014045-031	X												
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X										
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X												
					2014041		2014041-041	X												
					2014336-031		2014336-041	X												
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021 2016310-011 2014199-011	8104200	2014268-031 2016310-021 2014199-021									X				
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021 2016311-011 2014137-011	8104201	2014255-031 2016311-021 2014137-021								X					
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR [illegible]	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK A. APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK A. APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR A. Giordano CHK A. APPD	11/7/66	

Ⓐ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AT

8104002 AT

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30884	9/1/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							

Ⓐ THIS SHEET ADDED

8104002 AT

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

NEXT ASSY | USED ON

APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN J. Moy DATE 16 AUG 66
CHECKED E. Urban 23 AUG 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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NASA DRAWING NO. 8104002
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SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY.	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-01									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104081	1020343-02					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104081	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-01					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/	WK
K	CHANGED PER TDRR 22895 DR CHK APPD	10 Oct 65	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD		
N	CHANGED PER TDRR 25104 DR CHK	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD RCD	3/3/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK APPD RCD	3/23/66	
T	CHANGED PER TDRR 26868 DR CHK APPD	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD RCD	4/1/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	4/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD R.C.D.	5/ /66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/6/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR. CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR CHK APPD	7/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR Leonard CHK APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.D. APPD	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C.D. APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK C.D. APPD	8/ /66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK APPD	9/ /66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/25/66	

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
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DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A.J. Marinaro DATE 8 Jul '65
CHECKED D. Fraying 13 Jul 65
APPROVAL 7-14-65
APPROVAL
APPROVAL 7/14/65
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

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SHEET 1 OF 3

8104002 AU

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104092	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104092	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/6[illegible]	
N	CHANGED PER TDRR 25104 DR [illegible] CHK A. Kupfer APPD [illegible]	1/14/66	
P	CHANGED PER TDRR 25780 DR [illegible] CHK C. DeYreenia APPD P.E.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK [illegible] APPD [illegible]	3/11/66	
S	CHANGED PER TDRR 26675 DR [illegible] CHK A. Kupfer APPD P.E.D	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK [illegible] APPD P.E.D	4/1/66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK J. [illegible] APPD P.E.D	4/[illegible]/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C. DeYreenia APPD P.E.D	4/29/66	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD P.E.D	[illegible]	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD P.E.D	7/16/66	
Z	CHANGED PER TDRR 27888 DR R. Silver CHK [illegible] APPD	7/[illegible]/66	
AA	CHANGED PER TDRR 27890 DR J. Helley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battist CHK CAP APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J. Helley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Helley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.F.B.	8/3/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.F.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeYreenia APPD L.F.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeYreenia APPD L.F.B	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battist CHK C. DeYreenia APPD L.F.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD L.F.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Helley CHK A. Kupfer APPD L.F.B	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.F.B	9/6/66	
AR	CHANGED PER TDRR 30574 DR B. Papia CHK A. Kupfer APPD L.F.B	9/[illegible]/66	
AS	CHANGED PER TDRR 30882 DR J. Helley CHK A. Kupfer APPD L.F.B	9/14/66	
AT	CHANGED PER TDRR 30894 DR J. Giordano CHK A. Kupfer APPD L.F.B	10/3/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK A. Kupfer APPD L.F.B	10/[illegible]/66	

Ⓜ THIS SHEET ADDED

8104002 AU

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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 12 NOV 6[illegible]
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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CODE IDENT NO. 49956
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NASA DRAWING NO. 8104002
SCALE NONE
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SHEET 2 OF 3

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	23 66	
Y	CHANGED PER TDRR 27707 DR CHK C. DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R Silver CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battista CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/1/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.T.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR J. P. Leonard CHK A. Kupfer APPD L.T.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR L. Brown CHK A. Kupfer APPD L.T.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.T.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battista CHK C. DeGreenia APPD L.T.B	8/24/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.T.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD L.T.B	9/1/66	
AP	CHANGED PER TDRR 30547 L. R. S. Roberts CHK A. Kupfer APPD L.T.B	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD L.T.B	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.T.B	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD	10/8/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/25/66	

8104002 AU

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. P. Leonard DATE 1/21/66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014033-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014214-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					10069-3		1006423-001	X													
					1020236		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014483		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECT-ION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020233		2014410-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R Silver CHK APPD	7/6/66	
AA	CHANGED PER TDRR 27890 DR J Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C Battit CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J Kelley CHK A Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S Roberts CHK A Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J Kelley CHK A Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.T.S.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J P Leonard CHK A Kupfer APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreemia APPD	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreemia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C Battit CHK C. DeFreemia APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR S Roberts CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J Kelley CHK A Kupfer APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR L Giordano CHK A. Kupfer APPD	10/6/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD	10/25/66	

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL 3/21/66
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2019153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014042-021		2014042-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/22/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Halley CHK A. Kyper APPD	8/1/66	
AD	CHANGED PER TDRR 23042 DR S. Roberts CHK A. Kyper	8/3/66	
AE	CHANGED PER TDRR 28049 DR CHK A. Kyper	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.70	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kyper APPD L78	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kyper APPD. L70	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeYreema APPD L.7.8	8/12/66	
AK	CHANGED PER TDRR 29055 DR CA Peters CHK C. DeYreema APPD L77	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C. Battist CHK C. DeYreema APPD L70	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kyper APPD L78	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Halley CHK A. Kyper APPD L78	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kyper APPD L78	9/6/66	
AR	CHANGED PER TDRR 30574 DR B.J. Papia CHK A. Kyper APPD L78	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Halley CHK A. Kyper APPD L78	9/19/66	
AT	CHANGED PER TDRR 30884 DR J. Gundars CHK A. Kyper APPD L77	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kyper APPD L78	10/25/66	

(AA) THIS SHEET ADDED

8104002 AU

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	3Apr66	W.K.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD K.70	8/3/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD K70	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeMeenia APPD R.7.B	8/9/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeMeenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Bartlett CHK C. DeMeenia APPD K70	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD K70	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK A. Kupfer APPD K70	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD K70	9/6/66	
AR	CHANGED PER TDRR 30574 DR B. Papia CHK A. Kupfer APPD K70	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. DeMey CHK A. Kupfer APPD K70	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD K.D.Y	10/8/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD K70	10/25/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014153-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014029-021		X												
					1014404		2014279-011		X												
					1014416		2014308-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014091-011		2014091-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014045-011		2014045-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014096-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

Ⓐ THIS SHEET ADDED

8104002 AU

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31MAR66
CHECKED 31MAR66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
39	G&N INTER-CONNECTION SET, 'X' CON-FIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021	8104200	2014268-031									X					
					2016310-011		2016310-021														
					2014199-011		2014199-021														
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021	8104201	2014255-031								X						
					2016311-011		2016311-021														
					2014137-011		2014137-021														
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR [illegible]	[illegible]	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeGreenia APPD [illegible]	8/23/66	
AL	CHANGED PER TDRR 29800 DR. [illegible] CHK C. DeGreenia APPD [illegible]	8/27/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. [illegible] APPD [illegible]	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Kelley CHK A. [illegible] APPD [illegible]	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK A. [illegible] APPD [illegible]	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK A. [illegible] APPD [illegible]	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. [illegible] APPD [illegible]	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. [illegible] APPD [illegible]	11/8/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK A. [illegible] APPD [illegible]	11/23/66	

AJ THIS SHEET ADDED

8104002 AU

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 15 APR 66
CHECKED [illegible] 15 APR 66
APPROVAL
APPROVAL
APPROVAL [illegible] 4/18/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL [illegible] 4/14/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 7 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002AU

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30884	9/1/66	
AU	CHANGED PER TDRR 31282 DR. L. Eifert CHK G. Kupe APPD	11/21/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 8, 11, 13 THRU 16 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													

Ⓐ THIS SHEET ADDED

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LIST OF MATERIALS

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APPLICATION

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TOLERANCES ON
DECIMALS .XX ±   DECIMALS .XXX ±   ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. Moy DATE 16 AUG 66
CHECKED E. Uhm 23 AUG 66
APPROVAL R. J. Blackey
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL A. Kenna

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

8104002 AV

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR. CHK APPD	4/12/67	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104058	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104081	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-01					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	8/3/65	W.K.
K	CHANGED PER TDRR 22895 DR CHK APPD	10 OCT 65	
L	CHANGED PER TDRR 23990 DR CHK C.O. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.O. APPD		
N	CHANGED PER TDRR 25104 DR CHK	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.O. APPD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	3/23/66	
T	CHANGED PER TDRR [illegible] DR CHK APPD	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.O. APPD	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD	66	
Y	CHANGED PER TDRR 27707 DR CHK C.O. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR CHK APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD	8/?/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.O. APPD	8/17/66	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR [illegible] DR CHK C.O. APPD	66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30883 DR J. Holley CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK APPD	9/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/25/66	

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

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DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A. J. Marinaro DATE 8 JUL 65
CHECKED D. Frazier 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 8

8104002 AV

8104002 AV

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR P. Botts CHK CAP APPD 197	1/17	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/1/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupka APPD	1/1/66	
P	CHANGED PER TDRR 25780 DR CHK C. DiGrazia APPD PCD	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Blanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupka APPD KD	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK APPD PED	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	5/1/66	
V	CHANGED PER TDRR 27441 DR CHK APPD	5/26/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PCD		
Y	CHANGED PER TDRR 27707 DR CHK C.B. APPD PCD	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kupka APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Botts CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupka APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupka	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Holley CHK A. Kupka APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.T.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupka APPD L.T.B.	8/3/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupka APPD. LTB	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DiGrazia APPD L.T.B.	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DiGrazia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Botts CHK C. DiGrazia APPD LTB	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupka APPD LTB	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK APPD LTB	9/2/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupka APPD LTB	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupka APPD LTB	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupka APPD LTB	9/14/66	
AT	CHANGED PER TDRR 30854 DR J. Giordano CHK A. Kupka APPD LTB	10/3/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupka APPD LTB	10/25/66	

Ⓜ THIS SHEET ADDED

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE . ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE, APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104125	1006427						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104065	S.O.W. 5.2.4.2	1020344-02	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					[illegible]		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

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DO NOT SCALE DRAWING
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RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12/10/65
CHECKED
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL W 23 Nov
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002
SCALE NONE	WT	SHEET 2 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AU

8104002 AW

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020347-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	GK
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	5/23/66	
Y	CHANGED PER TDRR 27707 DR CHK C. DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. R. Silver CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/26/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28072 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.C	8/5/66	
AG	CHANGED PER TDRR 28084 DR J. P. Leonard CHK A. Kupfer APPD L.F.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK A. Kupfer APPD L.F.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.F.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	
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AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD L.F.B	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.F.B	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD L.F.B	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.F.B	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD L.D.F	10/8/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/25/66	
AV	CHANGED PER TDRR 32312 DR CHK APPD L.D.F	1/17/67	L.D.F

Ⓣ THIS SHEET ADDED

8104002 AW

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 FEB 66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/2/66
NASA APPROVAL
MIT APPROVAL 4/4/66
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AV

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014046-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-221	X													
					1020323		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014475		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016354-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R. Schaen CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR C. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD R.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.F. Leonard CHK A. Kupfer APPD L.73	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD L.73	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreenio APPD L.78	8/12/66	
AK	CHANGED PER TDRR 28055 DR CHK C. DeFreenio APPD L.D.F.	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C. Battist CHK C. DeFreenio APPD L.73	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.73	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD L.73	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD L.73	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.73	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD L.D.F.	10/8/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD L.73	10/25/66	
AV	CHANGED PER TDRR 32312 DR. C. Battist CHK CAP APPD L.D.F.	1/27/67	

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL 3/4/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL
MIT APPROVAL 4/7/66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AV

8104002 AV

SYM	DESCRIPTION	DATE	APPROVED
REVISIONS			
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28049 DR CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Holkam APPD L.7.8	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.7.8	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Dunn CHK. A. Kupfer APPD. L78	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.A. Maroni APPD L.7.8	8/12/66	
AK	CHANGED PER TDRR 29055 DR CA Luster CHK C. DeMaria APPD L77	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C. Battist CHK C. DeMaria APPD L78	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L78	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD L78	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L78	9/6/66	
AR	CHANGED PER TDRR 30574 DR B.J. Pepia CHK A. Kupfer APPD L78	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD L78	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD L77	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD L78	10/25/66	
AV	CHANGED PER TDRR 32312 DR. C. Battist CHK CAP APPD L77	11/ /66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104055	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
	COMPUTER	20 THRU	0104099	ECP-0215	X2014487-011	8104198	2014487-011	X													
35	TEST SET "X" CONFIGURATION COMPONENTS	26			X2014153-011		2019153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-021		2014092-021	X													

(AA) THIS SHEET ADDED

8104002 AV

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL P. 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 5 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AV

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 2806A		
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD	8/3/66	
AH	CHANGED PER TDRR 28090 DR W. Barnes CHK A. Kupfer APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD	8/ /66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeGreenia APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR B. Papin CHK A. Kupfer APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK A. Kupfer APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD	11/8/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD	11/25/66	
AV	CHANGED PER TDRR 32312 DR P. Battist CHK APPD	1/17/67	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & 'X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X											
					2014079-011		2014079-021		X											
					[illegible]		[illegible]		X											
					2014340-011		2014340-021		X											
					2014496-011		2016409-011		X											
					X2014105-011		2016412-011		X											
					2014277		2016401		X											
					X2014178-011		2014178-011		X											
					X2014180-011		2014180-011		X											
					X2014181-011		2014181-011		X											
					X2014184-011		2014184-011		X											
					2014297-011		2014297-021		X											
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.9.2	1020392	8104136	2014024-081		X											
					1014404		2014279-011		X											
					1014416		2014308-011		X											
					1014453		2014272-011		X											
					1014372		2014359		X											
					1020070		2014371		X											
					1014388		2014079-021		X											
					1020303		2014257-011		X											
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104058	ECP-0329 ECP-0344	2014042-011	8104187	2014042-021	X												
					2014036-011		2014036-021	X												
					2014219-011		2014219-021	X												
					2014228-011		2014228-021	X												
					2014037-011		2014037-021	X												
					2014224-011		2014224-021	X												
					2014229-011		2014229-021	X												
					2014090-011		2014040-021	X												
					2014375-011		2014375-021	X												
					2014467		2016416	X												
					2014377-011		2014377-021	X												
					2014378-011		2014378-021	X												
					2014041-011		2014041-021	X												
					2014352-011		2014352-021	X												
					2014315-011		2014315-021	X												
					2014336-011		2014336-021	X												
					2014045-011		2014045-021	X												
					2014327-011		2014327-021	X												
					2014294-011		2014294-021	X												
					2014179		2016415	X												
					2014366-011		2014366-021	X												
					2014362-011		2014362-021	X												
					2014046-011		2014046-021	X												
					2014275-011		2014275-041	X												
					2014275-021		2014275-051	X												
					2014275-031		2014275-061	X												

(AF) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AV

8104002 AV

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
39	G&N INTERCONNECTION SET, 'X' CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014131-011		2014131-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021		2014268-031									X					
					2016310-011	8104200	2016310-021														
					2014199-011		2014199-021														
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021	8104201	2014255-031								X						
					2016311-011		2016311-021														
					2014137-011		2014137-021														
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR ~~[illegible]~~	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR A. Giordano CHK APPD	11/8/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	12/23/66	
AV	CHANGED PER TDRR 32312 DR CHK APPD	1/17/67	

AJ THIS SHEET ADDED

8104002 AV

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

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DO NOT SCALE DRAWING
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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 8104002
SCALE NONE | WT | SHEET 7 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002AV

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30084	9/1/66	
AU	CHANGED PER TDRR 31282 DR. L. Efert CHK A. Kaplan APPD	11/29/66	
AV	CHANGED PER TDRR 32312 DR. CHK CAP APPD	1/10/67	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	SPARES
					P/N MODIF	RFK NO.	NEW P/N														
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 8, 11, 13 THRU 16 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													
48	PRINTING RECORDER	312	0104072	ECP-0391	1006965	8104211	1020211-021														*

Ⓐⓣ THIS SHEET ADDED

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. Moy DATE 16 AUG 66
CHECKED E. Uhm 23 AUG 66
APPROVAL R. J. Blackwell
APPROVAL 8/23/66
APPROVAL 8/31/66
NASA APPROVAL 9/1/66
MIT APPROVAL
MIT APPROVAL A. Hansen

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104002 AW

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED, MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	3104032	1020343					X									
6	C.T.S. KIT, BLOCK I&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR [illegible] CHK [illegible] APPD	4/3/67	
	AW	CHANGED PER TDRR 32631 DR [illegible] CHK J.C. APPD	4/27/67	

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD	[illegible]	
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD	11/2/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD	[illegible]	
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	[illegible]/66	
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD	[illegible]/66	
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD	[illegible]/66	
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD	3/23/66	
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD	4/4/66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD	4/11/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD	[illegible]	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD	[illegible]/66	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR [illegible] CHK [illegible] APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK [illegible] APPD	[illegible]/66	
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK [illegible] APPD	[illegible]/66	
AD	CHANGED PER TDRR [illegible] DR [illegible] CHK G. [illegible]	[illegible]	
AE	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD	[illegible]	
AF	CHANGED PER TDRR 28066 DR [illegible] CHK [illegible] APPD	[illegible]	
AG	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible] APPD	[illegible]	
AH	CHANGED PER TDRR 28090 DR [illegible] CHK [illegible] APPD.	[illegible]/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD	[illegible]	
AK	CHANGED PER TDRR 29055 [illegible]	[illegible]	
AL	CHANGED PER TDRR 29800 DR [illegible] CHK C.D. APPD.	[illegible]	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK [illegible] APPD	[illegible]/66	
AN	CHANGED PER TDRR 30170 DR [illegible] CHK [illegible] APPD	[illegible]/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK [illegible] APPD	[illegible]/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK [illegible] APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK [illegible] APPD	[illegible]/66	
AT	CHANGED PER TDRR 30884 DR [illegible] CHK [illegible] APPD	[illegible]	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK [illegible] APPD	10/25/66	

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 8 JUL '65
CHECKED D. [illegible] 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 3

8104002 AW

8104002 AW

ZONE	LTR	REVISIONS DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR C. Battista CHK APPD 197	1/17/67	
	AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	1/26/67	

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeGreenia APPD P.E.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Blanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.E.D	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK APPD PED	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeGreenia APPD PED	4/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PED	5/23/66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD PED	7/6/66	
Z	CHANGED PER TDRR 27888 DR R. Silver CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battista CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Holley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.F.B.	8/5/66	
AG	CHANGED PER TDPR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.F.B.	8/3/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.F.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD L.F.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD L.F.B	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battista CHK C. DeGreenia APPD L.F.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.F.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK APPD L.F.B	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.F.	9/6/66	
AR	CHANGED PER TDRR 30574 DR B. Papia CHK A. Kupfer APPD L.F.B	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD L.F.B	9/14/66	
AT	CHANGED PER TDRR 30894 DR J. Giordano CHK A. Kupfer APPD L.F.B	10/3/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD L.F.B	10/27/66	

Ⓜ THIS SHEET ADDED

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104125	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED 12 Nov 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Ryder 23 Nov
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AW

8104002 AW

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X								
					1020343-021															
					1020194		2014002-011					X								
					1020188		2014281					X								
					1020435															
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X						
					1014336		1020433							X						
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X						
					1020147		1020434							X						
					1014376		1020437							X						
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X	
			0104095		N/A	8104168	2016312-011												X	
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X									
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X									
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X							
					1006229		1006422													
					2016312-011		2016316-011						X							
					1006231		1006422													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	WK
U	CHANGED PER TDRR 27329 DR Fuller CHK S. Roganski APPD P.E.D	4/14/66	[illegible]
V	CHANGED PER TDRR 27441 DR Tom Lebon CHK C.D. APPD PED	5/23/66	[illegible]
W	CHANGED PER TDRR 27706 DR F. Rudolph CHK Hayward APPD P.E.D	23 [illegible] 66	[illegible]
Y	CHANGED PER TDAR 27707 DR Manning CHK C DeGreenia APPD P.E.D	6/16/66	[illegible]
Z	CHANGED PER TDRR 27888 DR. R Lebar CHK Manning APPD	7/11/66	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	[illegible]
AB	CHANGED PER TDRR 27886 DR P. Battista CHK CAP APPD	7/28/66	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	[illegible]
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	[illegible]
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	[illegible]
AF	CHANGED PER TDRR 28064 DR Jimmy CHK Walkowicz APPD L.7.B	8/5/66	[illegible]
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.7.B	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR L. Brown CHK A. Kupfer APPD L.7.B	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR B. Fuller CHK C. DeGreenia APPD L.7.B	8/12/66	[illegible]
AK	CHANGED PER TDRR 29055 DR Ol Pratt CHK C. DeGreenia APPD JDF	8/23/66	[illegible]
AL	CHANGED PER TDRR 29800 DR. P. Battista CHK C. DeGreenia APPD L.7.B	8/29/66	[illegible]
AM	CHANGED PER TDRR 29884 DR Rudolph CHK A. Kupfer APPD L.7.B	8/31/66	[illegible]
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD L.7.B	9/1/66	[illegible]
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.7.B	9/6/66	[illegible]
AR	CHANGED PER TDRR 30574 DR B. Papia CHK A. Kupfer APPD L.7.B	9/7/66	[illegible]
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.7.B	9/14/66	[illegible]
AT	CHANGED PER TDRR 30884 DR Giordano CHK A. Kupfer APPD JDF	10/8/66	[illegible]
AU	CHANGED PER TDRR 31282 DR [illegible] CHK A. Kupfer APPD L.7.B	10/7/66	[illegible]
AV	CHANGED PER TDRR 32312 DR P. Battista CHK CAP APPD JDF	1/17/67	JDF
AW	CHANGED PER TDRR 32631 DR R. H. CHK J.C. APPD	1/23/67	[illegible]

Ⓣ THIS SHEET ADDED

8104002 AW

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 1/7/66
CHECKED S. Roganski 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 4/1/66
MIT APPROVAL [illegible] 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AW

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R. Selner CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kupfer APPD	7/22/66	
AB	CHANGED PER TDRR 27886 DR C. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Holley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Williams APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X.F.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK A. Kupfer APPD LFB	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreenia APPD X.F.B	8/11/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreenia APPD LDF	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C. Battist CHK C. DeFreenia APPD LFB	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD LFB	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD LFB	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD LFB	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD LFB	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD LDF	10/8/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD LFB	10/25/66	
AV	CHANGED PER TDRR 32312 DR. C. Battist CHK CAP APPD LDF	1/7/67	
AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	1/25/67	

Ⓨ THIS SHEET ADDED

8104002 AW

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AW

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.Q.N. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		[illegible]									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	[illegible]	[illegible]	[illegible]	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-021		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. C. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Robert CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR [illegible] CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK Holkam APPD L.7.0.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.7.0	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. A. Kupfer APPD. L.7.0	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeYreenia APPD L.7.0	8/17/66	
AK	CHANGED PER TDRR 29055 DR CA Peretta CHK C. DeYreenia APPD L.7.7	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C. Battist CHK C. DeYreenia APPD L.7.0	8/?/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD L.7.0	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD L.7.0	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Robert CHK A. Kupfer APPD L.7.0	9/4/66	
AR	CHANGED PER TDRR 30574 DR B. Papia CHK A. Kupfer APPD L.7.0	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD L.7.0	9/17/66	
AT	CHANGED PER TDRR 30384 DR J. Gendeau CHK A. Kupfer APPD L.7.7	10/4/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK A. Kupfer APPD L.7.0	10/28/66	
AV	CHANGED PER TDRR 32312 DR. C. Battist CHK CAP APPD L.7.7	11/1/66	
AW	CHANGED PER TDRR 32631 DR RAJ. CHK J C. APPD	1/23/67	

ⒶⒶ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 31 MAR 66
CHECKED [illegible] 31 MAR 66
APPROVAL P. [illegible] 7 APR 66
APPROVAL B. Bryant 4/7/66
APPROVAL
NASA APPROVAL [illegible] 4/19/66
MIT APPROVAL W. Kupfer [illegible]
MIT APPROVAL [illegible] 9/[illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AW

8104002 AW

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	13 April	WK.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD	8/3/66	
AH	CHANGED PER TDRR 28090 DR CHK A. Kupfer APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreema APPD	8/2/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreema APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P Battist CHK C. DeFreema APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK A. Kupfer APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD	10/25/66	
AV	CHANGED PER TDRR 32312 DR P Battist CHK APPD	1/17/67	
AW	CHANGED PER TDRR 32631 DR BSJ CHK J.C. APPD	1/25/67	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & "X" CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X											
					2014079-011		2014079-021		X											
					[illegible]		[illegible]		X											
					2014340-011		2014340-021		X											
					2014496-011		2016409-011		X											
					X2014183-011		2016412-011		X											
					2014277		2016401		X											
					X2014178-011		2014178-011		X											
					X2014180-011		2014180-011		X											
					X2014181-011		2014181-011		X											
					X2014184-011		2014184-011		X											
					2014297-011		2014297-021		X											
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014024-021		X											
					1014404		2014279-011		X											
					1014416		2014308-011		X											
					1014453		2014272-011		X											
					1014372		2014359		X											
					[illegible]		2014371		X											
					1014388		2014079-021		X											
					1020303		2014257-011		X											
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104187	2014042-021	X												
					2014036-011		2014036-021	X												
					2014219-011		2014219-021	X												
					2014228-011		2014228-021	X												
					2014037-011		2014037-021	X												
					2014224-011		2014224-021	X												
					2014229-011		2014229-021	X												
					2014040-011		2014040-021	X												
					2014375-011		2014375-021	X												
					2014467		2016416	X												
					2014377-011		2014377-021	X												
					2014378-011		2014378-021	X												
					2014041-011		2014041-021	X												
					2014352-011		2014352-021	X												
					2014315-011		2014315-021	X												
					2014336-011		2014336-021	X												
					2014045-011		2014045-021	X												
					2014327-011		2014327-021	X												
					2014294-011		2014294-021	X												
					2014179		2016415	X												
					2014366-011		2014366-021	X												
					2014362-011		2014362-021	X												
					2014046-011		2014046-021	X												
					2014275-011		2014275-041	X												
					2014275-021		2014275-051	X												
					2014275-031		2014275-061	X												

Ⓐ THIS SHEET ADDED

8104002 AW

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
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DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AW

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR [illegible]	[illegible]	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. O. Battist CHK C. DeGreenia APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR S. Roberts CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Halley CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR S. Papia CHK A. Kupfer APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Halley CHK A. Kupfer APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Giordano CHK A. Kupfer APPD	11/8/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK A. Kupfer APPD	12/23/66	
AV	CHANGED PER TDRR 32312 DR O. Battist CHK AC APPD	1/13/67	
AW	CHANGED PER TDRR 32631 DR RMJ CHK J.C. APPD	2/3/67	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTER-CONNECTION SET, 'X' CON-FIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					[illegible]		[illegible]								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014463-011		2014463-011								X						
					[illegible]		[illegible]								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021 2016310-011 2014199-011	8104200	2014268-031 2016310-021 2014199-021									X					
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021 2016311-011 2014137-011	8104201	2014255-031 2016311-021 2014137-021								X						
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5						X								

Ⓐ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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DO NOT SCALE DRAWING
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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 15 APR 66
CHECKED [illegible] 15 APR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AW

8104002 AW

SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30684	9/1/66	
AU	CHANGED PER TDRR 31282 DR. CHK APPD	11/2/66	
AV	CHANGED PER TDRR 32312 DR. CHK CAP APPD	1/10/67	
AW	CHANGED PER TDRR 32631 DR R.H. CHK J.C. APPD	1/25/67	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	SPARES
					P/N MODIF	RFK NO.	NEW P/N														
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 8,11, 13 THRU 16 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													
48	PRINTING RECORDER	312	0104072	ECP-0391	1006965	8104211	1020211-021														*
50	BUFFER CIRCUIT AGC/CSF	1 THRU 10 11,13,15,16 22	0104108	ECP-0452	2014254-C21 2014255 031	8104216	2014254-031 2014255-041								*						

(AT) THIS SHEET ADDED

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 16 AUG 66
CHECKED 23 AUG 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AW

8104002 AY

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104056	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141,ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV. H WITH CHANGE

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR CHK APPD	4/12/67	
	AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	4/27/67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	5/15/67	

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21355	4/3/	
K	CHANGED PER TDRR 22895 DR CHK APPD		
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/2/65	
M	CHANGED PER TDRR 24224 DR W. Kailey CHK C.D. APPD		
N	CHANGED PER TDRR 25104 DR CHK	4/11/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	4/4/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	4/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	4/23/66	
T	CHANGED PER TDRR 26868 DR CHK APPD	5/11/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	7/1/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD		
W	CHANGED PER TDRR 27706 DR CHK APPD		
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR A. CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. Halley CHK APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 2789 DR J. Halley CHK APPD	7/1/66	
AD	CHANGED PER TDRR 28 DR CHK G.	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD		
AF	CHANGED PER TDRR 28064 DR CHK APPD		
AG	CHANGED PER TDRR 28084 DR CHK APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD.	8/9/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.D. APPD		
AK	CHANGED PER TDRR 29055 DR CHK APPD		
AL	CHANGED PER TDRR 29800 DR CHK C.D. APPD.		
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 3054 DR CHK APPD		
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30862 DR J. Halley CHK APPD		
AT	CHANGED PER TDRR 3088 DR CHK APPD		
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/25/66	

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx DECIMALS .xxx ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 JUL '65
CHECKED D. 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF

8104002 AY

8104002 AY

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR C. Catlett CHK APPD	1/17/67	
	AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	1/25/67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	4/13/67	

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK APPD	1/4/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeFreenia APPD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	3/23/66	
T	CHANGED PER TDRR 26863 DR CHK APPD	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	4/20/66	
V	CHANGED PER TDRR 27441 DR CHK APPD	[illegible]	
W	CHANGED PER TDRR 27706 DR CHK APPD	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	5/12/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/1/66	
AA	CHANGED PER TDRR 27890 DR J. Halley CHK APPD	7/1/66	
AB	CHANGED PER TDRR 27886 DR P. Catlett CHK APPD	7/26/66	
AC	CHANGED PER TDRR 27884 DR J. Halley CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	8/1/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK APPD	8/1/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK APPD.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreenia APPD	8/10/66	
AK	CHANGED PER TDRR 29055 CHK C. DeFreenia APPD	8/3/66	
AL	CHANGED PER TDRR 29800 DR CHK C. DeFreenia APPD	8/23/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Halley CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Halley CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30894 DR CHK APPD	9/1/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	9/26/66	

Ⓜ THIS SHEET ADDED

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APPOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002

SCALE ONE WT SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AY

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PED	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C. DeGruccia APPD PED	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK G. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK CAP APPD	7/26/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK G. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK G. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK G. Kupfer APPD	8/1/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD X7.3	8/8/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD X7.3	8/9/66	
AH	CHANGED PER TDRR 28090 DR L. Brown CHK G. Kupfer APPD X7.3	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGruccia APPD X7.3	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGruccia APPD	[illegible]	
AL	CHANGED PER TDRR 29800 DR. CHK C. DeGruccia APPD X7C	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK G. Kupfer APPD X7.3	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK G. Kupfer APPD X7.3	9/1/66	
AP	CHANGED PER TDRR 30547 DR J. Roberts CHK G. Kupfer APPD X7.3	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK G. Kupfer APPD X7.3	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK G. Kupfer APPD X7.3	[illegible]	
AT	CHANGED PER TDRR 30884 DR CHK G. Kupfer APPD 707	10/8/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD X7.3	[illegible]	
AV	CHANGED PER TDRR 32312 DR O. Bettie CHK CAP APPD 707	1/11/67	
AW	CHANGED PER TDRR 32631 DR CHK G.C. APPD	1/3/67	
AY	CHANGED PER TDRR 33450 DR S. Roberts CHK APPD	3/7/67	

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO. LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 1/7/66
CHECKED 18 FEB 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AY

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341		2014042-021	X													
					1014142	8104132	2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		201404[illegible]-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006329		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014475		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27868 DR R. [illegible] CHK [illegible] APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J [illegible] CHK G. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. [illegible] CHK [illegible] APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J [illegible] CHK G. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR [illegible] CHK G. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J [illegible] CHK G. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD [illegible]	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. [illegible] CHK G. Kupfer APPD [illegible]	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. [illegible] CHK G. Kupfer APPD [illegible]	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. [illegible] APPD [illegible]	8/2/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. [illegible] APPD [illegible]	8/23/66	
AL	CHANGED PER TDRR 29800 DR C. [illegible] CHK C. [illegible] APPD [illegible]	7/20/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK G. Kupfer APPD [illegible]	8/31/66	
AN	CHANGED PER TDRR 30170 DR [illegible] CHK G. Kupfer APPD [illegible]	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK G. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK G. Kupfer APPD [illegible]	9/7/66	
AS	CHANGED PER TDRR 30882 DR J [illegible] CHK G. Kupfer APPD [illegible]	9/17/66	
AT	CHANGED PER TDRR 30884 DR [illegible] CHK G. Kupfer APPD [illegible]	9/8/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK G. Kupfer APPD [illegible]	11/25/66	
AV	CHANGED PER TDRR 32312 DR. C. [illegible] CHK [illegible] APPD [illegible]	1/1/67	
AW	CHANGED PER TDRR 32631 DR R [illegible] CHK J.C. APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR [illegible] CHK [illegible] APPD	4/5/67	

8104002 AY

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 6 MAR
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AY

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	[illegible] THRU 26	[illegible]	ECP-0215	[illegible]	[illegible]	[illegible]	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-021		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battist CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. CHK. A. Kupfer APPD.	8/10/66	
AJ	CHANGED PER TDRR 28069 DR CHK C. DeFreenia APPD	/1/66	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	8/27/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD	9/4/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD	9/19/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD	10/28/66	
AV	CHANGED PER TDRR 32312 DR. P. Battist CHK APPD	1/6/67	
AW	CHANGED PER TDRR 32631 DR CHK JC APPD	1/27/67	
AY	CHANGED PER TDRR 33450 DR CHK JC APPD	4/25/67	

(AA) THIS SHEET ADDED

8104002 AY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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MATERIAL

NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AY

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	[illegible]	JK
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD X78	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR W. Burns CHK G. Kupfer APPD X78	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR CHK C. DeYreema APPD R.F.B	8/?/66	[illegible]
AK	CHANGED PER TDRR 29055 DR CHK C. DeYreema APPD X78	8/23/66	[illegible]
AL	CHANGED PER TDRR 29800 DR P Battist CHK C. DeYreema APPD X78	8/29/66	[illegible]
AM	CHANGED PER TDRR 29884 DR CHK G. Kupfer APPD X78	8/31/66	[illegible]
AN	CHANGED PER TDRR 30170 DR CHK G. Kupfer APPD X73	9/1/66	[illegible]
AP	CHANGED PER TDRR 30547 DR CHK G. Kupfer APPD X73	9/6/66	[illegible]
AR	CHANGED PER TDRR 30574 DR CHK G. Kupfer APPD X73	9/7/66	[illegible]
AS	CHANGED PER TDRR 30862 DR CHK G. Kupfer APPD X73	9/14/66	[illegible]
AT	CHANGED PER TDRR 30884 DR CHK G. Kupfer APPD X74	11/8/66	[illegible]
AU	CHANGED PER TDRR 31282 DR CHK G. Kupfer APPD X70	11/25/66	[illegible]
AV	CHANGED PER TDRR 32312 DR C Battist CHK APPD X77	1/17/67	[illegible]
AW	CHANGED PER TDRR 32631 DR BSJ CHK J C APPD	1/25/67	[illegible]
AY	CHANGED PER TDRR 33450 DR CHK APPD	4/?/67	[illegible]

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & 'X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.9.2	1020392	8104136	2014029-021		X												
					1014404		2014279-011		X												
					1014416		2014308-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1019388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014091-011		2014091-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014095-011		2014095-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014244-021	X													
					2014 79		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014096-011		2014096-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

(AF) THIS SHEET ADDED

8104002 AY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 3 MAR 66
CHECKED 3 MAR 66
APPROVAL
APPROVAL 8/13/66
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AY

TEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
39	G&N INTER-CONNECTION SET, X'CON-FIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					[illegible]		[illegible]								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9,11,12,14, 15,16,18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021		2014268-031														
					2016310-011	8104200	2016310-021									X					
					2014199-011		2014199-021														
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9,11,13, 15 THRU 22	0104070	ECP 0389	2014255-021	8104201	2014255-031														
					2016311-011		2016311-021								X						
					2014137-011		2014137-021														
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR [illegible]	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	7/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	7/27/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK APPD	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/28/66	
AV	CHANGED PER TDRR 32312 DR CHK APPD	11/1/66	
AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	2/7/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	4/ /67	

Ⓐ THIS SHEET ADDED

8104002 AY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 15 APR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AY

SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30[illegible]	9/1/66	[illegible]
AU	CHANGED PER TDRR 31282 DR. [illegible] CHK [illegible] APPD [illegible]	11/2/66	[illegible]
AV	CHANGED PER TDRR 32312 DR. [illegible] CHK [illegible] APPD [illegible]	1/13/67	[illegible]
AW	CHANGED PER TDRR 32631 DR R [illegible] CHK J.C. APPD	1/25/67	[illegible]
AY	CHANGED PER TDRR 33450 DR [illegible] CHK [illegible] APPD	4/7/67	[illegible]

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	SPARES
					P/N MODIF	RFK NO.	NEW P/N														
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 8,11, 13 THRU 16, 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													
48	PRINTING RECORDER	312	0104072	ECP-0391	1006965	8104211	1020211-021														*
49	COMPUTER TEST SET	3,5THRU9, 11,13THRU16 19THRU26	0104107	ECP-509	2014042-051	8104215	2014042-061	*													
50	BUFFER CIRCUIT AGC/CSE	1 THRU 10 11,13,15,16-22	0104108	ECP-0452	2014254-021 2014255 031	8104216	2014254-031 2014255-041								*						

Ⓐⓣ THIS SHEET ADDED

8104002 AY

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 16 AUG 66
CHECKED [illegible] 23 AUG 66
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AZ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X										
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MC1	X												
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X				
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X					
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X								
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X												
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X											
8	CHANGE COLD PLATE & MANIFOLD ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X						
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X									
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X												
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X												
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X						
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X										
					1014099		1014099 MD1			X										
					1014110		1014110 MD1			X										
					1020204		1020204 MD1			X										
					1014090		1014090 MD1			X										
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X												
					1020288-1		1020288-1 MD1	X												
					1020288-2		1020288-2 MD1	X												
					1020288-3		1020288-3 MD1	X												
					1014124		1014124 MD1	X												
					1014160		1014160 MD1	X												
					1020164		1020164 MD1	X												
					1014162		1014162 MD1	X												
					1014163		1014163 MD1	X												
					1014164		1014164 MD1	X												
					1014176		1014176 MD1	X												
					1020356		1020356 MD1	X												
					1020357		1020357 MD1	X												
					1014166		1014166 MD1	X												
					1014167		1014167 MD1	X												
					1014168		1014168 MD1	X												
					1014169		1014169 MD1	X												
					1014177		1014177 MD1	X												
					1020277		1020277 MD1	X												
					1020282		1020282 MD1	X												
					1020283		1020283 MD1	X												
					1020263 MD1		1020263 MD2	X												
					1020267		1020267 MD1	X												
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X										
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X				
		1-6&9	0104052		1020321	8104093	1020428-011									X				
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X								
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X								
		2-8,10,11	0104037		1020330	8104051	1020436-011					X								

SUPERSEDED BY ITEM NO. 19

① REPLACES REV H WITH CHANGE

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR CHK APPD	11/2/67	
	AW	CHANGED PER TDRR 32631 DR CHK J C APPD	1/27/67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	1/5/67	
	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350		
K	CHANGED PER TDRR 22895 DR CHK APPD		
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/2/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD		
N	CHANGED PER TDRR 25104 DR CHK	4/4/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	/66	
T	CHANGED PER TDRR 26828 DR G.J. Binn CHK APPD	4/4/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	/66	
W	CHANGED PER TDRR 27706 DR CHK APPD	/66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK APPD	7/2/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	/66	
AC	CHANGED PER TDRR 27864 DR CHK APPD	/66	
AD	CHANGED PER TDRR 28 DR CHK	/66	
AE	CHANGED PER TDRR 2804 DR CHK APPD	/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	/66	
AG	CHANGED PER TDRR DR Leonard CHK APPD	8/3/66	
AH	CHANGED PER TDRR 280 DR CHK APPD	/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.D. APPD	/66	
AK	CHANGED PER TDRR 29055 DR CHK APPD	/66	
AL	CHANGED PER TDRR 29800 DR CHK C.D. APPD	/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR DR CHK APPD	/66	
AP	CHANGED PER TDRR 3034 DR CHK APPD	/66	
AR	CHANGED PER TDRR 057 DR CHK APPD	/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	/66	
AT	CHANGED PER TDRR 308 DR CHK APPD	/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/2/66	

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 Jul 65
CHECKED D. 13 Jul 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF

8104002 AZ

8104002 AZ

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104125	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014057		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR P. Catlett CHK APPD	1/17/67	
	AW	CHANGED PER TDRR 32631 DR R CHK J.C. APPD	1/26/67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	4/13/67	
	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK APPD	1/ /66	
P	CHANGED PER TDRR 25780 DR CHK C. APPD P.C.D.	3/ /66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	3/2/66	
T	CHANGED PER TDRR 26863 DR CHK APPD PED	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	4/20/66	
V	CHANGED PER TDRR 27441 DR CHK APPD PED	4/28/66	
W	CHANGED PER TDRR 27705 DR CHK APPD PED		
Y	CHANGED PER TDRR 27707 DR CHK C.B. APPD PED	/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. Hilley CHK APPD	7/ /66	
AB	CHANGED PER TDRR 27886 DR P. Catlett CHK APPD	7/ /66	
AC	CHANGED PER TDRR 27886 DR CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 29044 DR CHK APPD	/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD L.T.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J. P. Leonard CHK APPD L.T.B.	8/3/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. APPD. LTB	8/ /66	
AJ	CHANGED PER TDRR 28068 DR CHK APPD L.T.B.	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/ /66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD LTB	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD LTB	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/ /66	
AP	CHANGED PER TDRR 30547 DR CHK APPD LTB	/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD LTB	9/ /66	
AS	CHANGED PER TDRR 30882 DR J. Hilley CHK APPD LTB	9/ /66	
AT	CHANGED PER TDRR 31354 DR CHK APPD	10/ /66	
AU	CHANGED PER TDRR 31282 DR CHK APPD LTB	/66	

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AZ

8104002 AZ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(1)	1020343 1020343-021	8104086	2014014-011					X									
					1020194		2014002-011					X									
					1020188 1020435		2014281					X									
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011 1006229	8104161	2016316-011 1006422						X								
					2016312-011 1006231		2016316-011 1006422						X								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	5-4-66	WK
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD P.E.D	[illegible]	[illegible]
V	CHANGED PER TDRR 27441 DR Tom [illegible] CHK C.D. APPD PED	[illegible]	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK C. [illegible] APPD P.E.D	23 [illegible] 66	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C. DeFreesia APPD P.E.D	6/16/66	[illegible]
Z	CHANGED PER TDRR 27888 DR R. Selmer CHK [illegible] APPD	7/1/66	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/7/66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK CAP APPD	7/8/66	[illegible]
AC	CHANGED PER TDRR 27884 DR [illegible] CHK A. Kupfer APPD	[illegible]	[illegible]
AD	CHANGED PER TDRR 28042 DR [illegible] CHK A. Kupfer	7/13/66	[illegible]
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	7/14/66	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD L.7.3	8/2/66	[illegible]
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L7.3	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR L. Brown CHK A. Kupfer APPD L7.3	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeFreesia APPD L.7.3	8/12/66	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeFreesia APPD L.7.4	[illegible]	[illegible]
AL	CHANGED PER TDRR 29800 DR. [illegible] CHK C. DeFreesia APPD L.7.8	[illegible]	[illegible]
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD L.7.3	8/31/66	[illegible]
AN	CHANGED PER TDRR 30170 DR [illegible] CHK A. Kupfer APPD L.7.3	[illegible]	[illegible]
AP	CHANGED PER TDRR 30547 DR [illegible] CHK A. Kupfer APPD L.7.3	[illegible]	[illegible]
AR	CHANGED PER TDRR 30574 DR [illegible] CHK A. Kupfer APPD L.7.3	[illegible]	[illegible]
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD L.7.3	[illegible]	[illegible]
AT	CHANGED PER TDRR 30884 DR [illegible] CHK A. Kupfer APPD L.7.7	[illegible]	[illegible]
AU	CHANGED PER TDRR 31282 DR [illegible] CHK A. Kupfer APPD L.7.8	[illegible]	[illegible]
AV	CHANGED PER TDRR 32312 DR [illegible] CHK CAP APPD 7.D.7	[illegible]	[illegible]
AW	CHANGED PER TDRR 32631 DR [illegible] CHK J.C. APPD	1/27/67	[illegible]
AY	CHANGED PER TDRR 33450 DR [illegible] CHK [illegible] APPD	[illegible]	[illegible]
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 17 FEB 66
CHECKED [illegible] 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible] 7/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF [illegible]

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AZ

8104002 AZ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8, 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341		2014042-021	X													
					1014142	8104132	2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006329		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014475		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-3		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R [illegible] CHK [illegible] APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J Kelley CHK G. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C Battat CHK [illegible] APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J Kelley CHK G Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S Roberts CHK G Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J Kelley CHK G Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK Wolkanin APPD L.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD LFB	8/11/66	
AH	CHANGED PER TDRR 28090 DR W. Bowen CHK G. Kupfer APPD LFB	8/17/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeFreeuw APPD LFB	8/24/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeFreeuw APPD LFB	8/23/66	
AL	CHANGED PER TDRR 29800 DR C Battat CHK C. DeFreeuw APPD LFB	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK G Kupfer APPD LFB	8/31/66	
AN	CHANGED PER TDRR 30170 DR S Roberts CHK G Kupfer APPD LFB	9/1/66	
AP	CHANGED PER TDRR 30547 DR S Roberts CHK G. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK G. Kupfer APPD LFB	9/7/66	
AS	CHANGED PER TDRR 30882 DR J Kelley CHK G. Kupfer APPD LFB	9/14/66	
AT	CHANGED PER TDRR 30884 DR [illegible] CHK G. Kupfer APPD LFB	9/21/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK G. Kupfer APPD LFB	9/28/66	
AV	CHANGED PER TDRR 32312 DR C. Battat CHK [illegible] APPD LFB	1/3/67	
AW	CHANGED PER TDRR 32631 DR R [illegible] CHK J.C. APPD	1/5/67	
AY	CHANGED PER TDRR 33450 DR S Roberts CHK Wolkanin APPD	2/5/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK

8104002 AZ

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 28MAR6
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AZ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014439-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-021		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battist CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Halley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR Stofert CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28049 DR CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Holkam APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Damm CHK A. Kupfer APPD.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battist CHK C. DeGreenia APPD	8/26/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Halley CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer. APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Halley CHK A. Kupfer APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD	10/24/66	
AV	CHANGED PER TDRR 32312 DR. P. Battist CHK APPD	1/6/67	
AW	CHANGED PER TDRR 32631 DR CHK J C APPD	1/27/67	
AY	CHANGED PER TDRR 33450 DR CHK J C APPD	4/25/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK

(AA) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

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ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED
APPROVAL
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL
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MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AZ

8104002 AZ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014017-011		2014073-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.4.2	1020392	8104136	2014024-081		X												
					1014404		2014279-011		X												
					1014416		2014302-011		X												
					1014453		2014372-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014090-011		2014090-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014379-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014095-011		2014095-021	X													
					[illegible]		[illegible]														
					2014294-011		2014294-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014096-011		2014096-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 29064		
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD R70	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Barnes CHK G. Kupfer APPD R70	8/10/66	
AJ	CHANGED PER TDRR 28068 DR C.F. Fuller CHK C. DeFreena APPD R.7.B	8/4/66	
AK	CHANGED PER TDRR 29055 DR C.C. Auster CHK C. DeFreena APPD J.T.4	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeFreena APPD R70	8/29/66	
AM	CHANGED PER TDRR 29884 DR Pinelle CHK G. Kupfer APPD R70	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Roberts CHK G. Kupfer APPD R70	9/1/66	
AP	CHANGED PER TDRR 30547 DR J. Roberts CHK G. Kupfer APPD R70	9/6/66	
AR	CHANGED PER TDRR 30574 DR A. Papa CHK G. Kupfer APPD R70	9/1/66	
AS	CHANGED PER TDRR 30882 DR CHK G. Kupfer APPD R70	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK G. Kupfer APPD J.T.4	11/9/66	
AU	CHANGED PER TDRR 31282 DR CHK G. Kupfer APPD R70	10/25/66	
AV	CHANGED PER TDRR 32312 DR P. Battist CHK APPD J.T.7	1/17/67	
AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	4/3/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK

AF THIS SHEET ADDED

8104002 AZ

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

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DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL G.C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT -
SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AZ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
39	G&N INTER-CONNECTION SET, 'X' CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014404-011		[illegible]								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					[illegible]		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	4 THRU 9, 11, 12, 14, 15, 16, 18 THRU 26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
4	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	4 THRU 9,11,12,14, 15,16,18 THRU 26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
3	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021		2014268-031														
					2016310-011	8104200	2016310-021									X					
					2014199-011		2014199-021														
4	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021	8104201	2014255-031														
					2016311-011		2016311-021								X						
					2014137-011		2014137-021														
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 29068		
AK	CHANGED PER TDRR 29055 DR CHK APPD	7/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	7/27/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK APPD	11/7/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	11/23/66	
AV	CHANGED PER TDRR 32312 DR CHK APPD	1/17/67	
AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	3/27/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	4/3/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JCK

AJ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 15 APR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
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MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N-GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO 8104002
SCALE NONE
WT
SHEET 7 OF 9

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 AZ

8104002 AZ

SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30884	9/1/66	
AU	CHANGED PER TDRR 31282 DR. L Eifert CHK G. Kuper APPD	11/28/66	
AV	CHANGED PER TDRR 32312 DR. P Bottet CHK CAP APPD	1/12/67	
AW	CHANGED PER TDRR 32631 DR R M J CHK J.C. APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR [illegible] CHK [illegible] APPD	4/7/67	
AZ	REVISED PER TDRR 35215	19 DEC 67	JRK

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	SPARES
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 11, 13 THRU 16 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													
48	PRINTING RECORDER	312	0104072	ECP-0391	1006965	8104211	1020211-021														*
49	COMPUTER TEST SET	3,5THRU-11,13THRU16 19THRU26	0104107	ECP-509	2014042-051	8104215	2014042-061	*													
50	BUFFER CIRCUIT AGC/CSE	1 THRU10 11,13,15,16-22	0104108	ECP-0452	2014254-021 2014255 031	8104216	2014254-031 2014255-041								*						
51	POWER SUPPLY SPARES	13 & 14 13 & 14	0104128	ECP-575	1006931-2 1006935	8104242	1006432 1006433														*

Ⓐⓣ THIS SHEET ADDED

8104002 AZ

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DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 16 AUG 66
CHECKED [illegible] 23 AUG 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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CODE IDENT NO. 49956
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NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

[illegible]

8104002

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W32 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1& 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1& 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR CHK APPD	4/12/67	
	AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	4/27/67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	4/5/67	
	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
	BA	REVISION STATUS CHANGED	8 FEB 68	JRK

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350		
K	CHANGED PER TDRR 22895 DR CHK APPD		
L	CHANGED PER TDRR 23998 DR CHK C.O. APPD	1/12/66	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.O. APPD		
N	CHANGED PER TDRR 25104 DR CHK	4/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.O. APPD	/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	/66	
T	CHANGED PER TDRR 26829 DR CHK APPD	4/4/66	
U	CHANGED PER TDRR 27329 DR CHK APPD	7/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.O. APPD		
W	CHANGED PER TDRR 27706 DR CHK APPD		
Y	CHANGED PER TDRR 27707 DR CHK C.O. APPD	6/16/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD		
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK APPD	7/24/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 2786[illegible] DR J. Kelley CHK APPD	/66	
AD	CHANGED PER TDRR 28[illegible] DR CHK G.	/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	/66	
AG	CHANGED PER TDRR [illegible] DR Leonard CHK APPD	/19/66	
AH	CHANGED PER TDRR 280[illegible] DR CHK APPD	/66	
AJ	CHANGED PER TDRR 28068 DR CHK C.O. APPD	/66	
AK	CHANGED PER TDRR 29055 DR CHK APPD	/23/	
AL	CHANGED PER TDRR 29800		
AM	CHANGED PER TDRR 2988[illegible] DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR [illegible] DR CHK APPD	/66	
AP	CHANGED PER TDRR 305[illegible] DR CHK APPD	/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	/66	
AT	CHANGED PER TDRR 3088[illegible] DR CHK APPD	/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/25/66	

① REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX DECIMALS .XXX ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 JUL '65
CHECKED D. Fraguz 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF

8104002 BA

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR C. Catt CHK CAP APPD	[illegible]	
	AW	CHANGED PER TDRR 32631 DR R.W.J. CHK J.C. APPD	1/25/67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	4/15/67	
	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
	BA	REVISION STATUS CHANGED	8 FEB 68	JRK

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	[illegible]	
N	CHANGED PER TDRR 25104 DR CHK G. Kupfer APPD	[illegible]	
P	CHANGED PER TDRR 25780 DR CHK C. DeTrucina APPD P.C.D	[illegible]/66	
R	CHANGED PER TDRR 26685 DR CHK APPD	[illegible]/66	
S	CHANGED PER TDRR 26675 DR CHK G. Kupfer APPD	[illegible]	
T	CHANGED PER TDRR 26863 DR CHK APPD PED	[illegible]/66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	[illegible]/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeTrucina APPD PED	[illegible]	
W	CHANGED PER TDRR 27706 DR CHK APPD PED	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD PED	[illegible]/66	
Z	CHANGED PER TDRR 27898 DR CHK APPD	[illegible]/66	
AA	CHANGED PER TDRR 27890 DR J. Halley CHK G. Kupfer APPD	[illegible]	
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]	
AC	CHANGED PER TDRR 27884 DR J. Halley CHK G. Kupfer APPD	[illegible]	
AD	CHANGED PER TDRR 28042 DR CHK G. Kupfer	[illegible]	
AE	CHANGED PER TDRR 28044 DR J. Halley CHK G. Kupfer APPD	[illegible]	
AF	CHANGED PER TDRR 28064 DR CHK APPD	[illegible]	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD	[illegible]	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK G. Kupfer APPD	[illegible]/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeTrucina APPD	[illegible]/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeTrucina APPD	[illegible]	
AL	CHANGED PER TDRR 29800 DR CHK C. DeTrucina APPD	[illegible]	
AM	CHANGED PER TDRR 29884 DR CHK G. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Halley CHK APPD	[illegible]	
AP	CHANGED PER TDRR 30547 DR CHK G. Kupfer APPD	[illegible]/66	
AR	CHANGED PER TDRR 30574 DR CHK G. Kupfer APPD	[illegible]/66	
AS	CHANGED PER TDRR 30882 DR J. Halley CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30894 DR CHK G. Kupfer APPD	[illegible]	
AU	CHANGED PER TDRR 31282 DR CHK G. Kupfer APPD	[illegible]/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X			REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X										REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X										
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X								
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104065	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X										
					1014087		2016333-011				X										
					1014216		2016332-011				X										
					1014076		2016330-011				X										
					1020081		2016331-011				X										
					1014289		2014269-011				X										
					1014041		2014204-011				X										
					1006875		1006875-002				X										
					1014303-4		1014303-6				X										
					1006882-1		1006437-1				X										
					1014001-7		2014080-011				X										
					1014001-1		2014080-061				X										
					1014001-6		2014080-081				X										
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X									
					1020429-011		1020436-011					X									
					1020432		1020435					X									
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X							

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BA

8104002 BA

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	REF NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					~~1020343-021~~																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDAR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	7/[illegible]/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	7/14/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PED	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C. DeMarco APPD PED	6/30/66	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK G. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/26/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK G. Kupfer APPD	7/[illegible]/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK G. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28[illegible] DR J. Kelley CHK G. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR Young CHK APPD R.T.B.	8/7/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD R.T.B.	8/9/66	
AH	CHANGED PER TDRR 28090 DR L. Barron CHK G. Kupfer APPD R.T.B.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeMarco APPD R.T.B.	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeMarco APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD R.T.B.	8/24/66	
AM	CHANGED PER TDRR 29884 DR CHK G. Kupfer APPD R.T.B.	8/31/66	
AN	CHANGED PER TDRR30170 DR S. Roberts CHK G. Kupfer APPD R.T.B.	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK G. Kupfer APPD R.T.B.	11/6/66	
AR	CHANGED PER TDRR 30574 DR CHK G. Kupfer APPD R.T.B.	11/7/66	
AS	CHANGED PER TDRR 30[illegible] DR J. Kelley CHK G. Kupfer APPD R.T.B.	11/14/66	
AT	CHANGED PER TDRR 30884 DR CHK G. Kupfer APPD	11/18/66	
AU	CHANGED PER TDRR 31282 DR CHK G. Kupfer APPD R.T.B.	12/29/66	
AV	CHANGED PER TDRR 32312 DR CHK APPD	[illegible]	
AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	1/27/67	
AY	CHANGED PER TDRR 33450 DR S. Roberts CHK APPD	4/[illegible]/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISION STATUS CHANGED	8 FEB 68	JRK

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 1/7/66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/1/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 7/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BA

8104002 BA

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W 5.2.4.2	1020341		2014042-021	X													
					1014142	8104132	2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020253		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014330		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014045-011	X													
					1014410		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27868 DR R CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J CHK APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J CHK APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK	8/3/66	
AE	CHANGED PER TDRR 28044 DR J CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD R.T.S.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J P CHK APPD RTS	8/9/66	
AH	CHANGED PER TDRR 28090 DR CHK APPD RTS	8/[illegible]/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD R.T.S.	8/[illegible]/66	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/[illegible]/66	
AL	CHANGED PER TDRR 29800 DR CHK C. DeGreenia APPD RTS	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD RTS	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD RTS	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD RTS	9/1/66	
AS	CHANGED PER TDRR 30882 DR J CHK APPD RTS	9/17/66	
AT	CHANGED PER TDRR 30884 DR CHK G. APPD	10/1/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD RTS	10/27/66	
AV	CHANGED PER TDRR 32312 DR. CHK APPD	4/7/67	
AW	CHANGED PER TDRR 32631 DR R CHK APPD	1/27/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	1/5/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISION STATUS CHANGED	FEB 68	JRK

8104002 BA

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 MAR
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BA

SYM	DESCRIPTION	DATE	APPROVED
REVISIONS			
AA	THIS SHEET ADDED PER TDRR 27870	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Battat CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Bhat CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28049 DR Maney CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Holkam APPD X.70	8/5/66	
AG	CHANGED PER TDRR 28084 DR J. P. Leonard CHK A. Kupfer APPD X.73	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Dunn CHK A. Kupfer APPD. X.70	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeGreenia APPD X.7.6	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeGreenia APPD X.77	8/23/66	
AL	CHANGED PER TDRR 29800 DR. V. Battat CHK C. DeGreenia APPD X.76	8/29/66	
AM	CHANGED PER TDRR 29864 DR CHK A. Kupfer APPD X.76	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD X.73	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD X.73	9/6/66	
AR	CHANGED PER TDRR 30574 DR Papia CHK A. Kupfer APPD X.73	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD X.76	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Gordon CHK A. Kupfer APPD X.77	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD X.76	10/28/66	
AV	CHANGED PER TDRR 32312 DR. C. Battat CHK APPD X.77	[illegible]	
AW	CHANGED PER TDRR 32631 DR CHK J C APPD	1/27/67	
AY	CHANGED PER TDRR 33450 DR S. Roberts CHK J C APPD J. & R.	4/25/67	J & R.
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISION STATUS CHANGED	8 FEB 68	JRK

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB-SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014439-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2019153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014980-011		2014980-011	X													
					2014042-021		2014042-021	X													

(AA) THIS SHEET ADDED

8104002 BA

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO 49956
SIZE D
NASA DRAWING NO 8104002
SCALE NONE
WT
SHEET 5 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BA

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					[illegible]		[illegible]		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.9.2	1020342	8104136	2014029-081		X												
					1014404		2014279-011		X												
					1014416		2014308-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020909		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0379 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014225-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014090-011		[illegible]	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014095-011		2014095-02	X													
					2014327-011		2014327-02	X													
					[illegible]		[illegible]	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014046-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064		K.
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X 76	8/4/66	
AH	CHANGED PER TDRR 28090 DR W. Burns CHK A. Kupfer APPD X 70	8/19/66	
AJ	CHANGED PER TDRR 28068 DR C.F. Fuller CHK C. DeFreema APPD R.7.B	8/2/66	
AK	CHANGED PER TDRR 29055 DR CA Booth CHK C DeFreema APPD 774	7/29/66	
AL	CHANGED PER TDRR 29800 DR P Battist CHK C. DeFreema APPD K70	7/29/66	
AM	CHANGED PER TDRR 29884 DR Povillo CHK A Kupfer APPD X 70	8/31/66	
AN	CHANGED PER TDRR 30170 DR J Roberts CHK A. Kupfer APPD X73	9/1/66	
AP	CHANGED PER TDRR 30547 DR J Rapito CHK A Kupfer APPD X70	9/6/66	
AR	CHANGED PER TDRR 30574 DR C.J.Prpic CHK APPD X 49	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Walberg CHK A. Kupfer APPD X73	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK A Kupfer APPD X 77	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A Kupfer APPD X70	10/25/66	
AV	CHANGED PER TDRR 32312 DR P Battist CHK CDP APPD X 77	1/17/67	
AW	CHANGED PER TDRR 32631 DR RSJ CHK J C APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR J Roberts CHK APPD	4/7/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISION STATUS CHANGED	8 FEB 68	JRK

AF THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL
APPROVAL 4/13/66
APPROVAL
NASA APPROVAL G. G. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BA

8104002 BA

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
39	G&N INTER-CONNECTION SET, X CON-FIGURATION COMPONENTS	16THRU22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					[illegible]		[illegible]								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	5-8, 11, 13-16, 19, 20-26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104046	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	5-8, 11, 13-16, 19, 20-26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021		2014268-031														
					2016310-011	8104200	2016310-021									X					
					2014199-011		2014199-021														
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021	8104201	2014255-031														
					2016311-011		2016311-021								X						
					2014137-011		2014137-021														
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 3[illegible]8		
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. [illegible] APPD [illegible]	[illegible]/66	
AL	CHANGED PER TDRR 29800 DR. O. [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK [illegible] APPD [illegible]	8/[illegible]/66	
AN	CHANGED PER TDRR 30170 DR [illegible] CHK [illegible] APPD [illegible]	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK [illegible] APPD [illegible]	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK [illegible] APPD [illegible]	9/7/66	
AS	CHANGED PER TDRR 30882 DR [illegible] CHK [illegible] APPD [illegible]	9/14/66	
AT	CHANGED PER TDRR 30884 DR [illegible] CHK [illegible] APPD [illegible]	11/4/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	
AV	CHANGED PER TDRR 32312 DR O. [illegible] CHK [illegible] APPD [illegible]	[illegible]	
AW	CHANGED PER TDRR 32631 DR [illegible] CHK J.C. APPD	[illegible]/67	
AY	CHANGED PER TDRR 33450 DR [illegible] CHK [illegible] APPD	4/[illegible]/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISED PER TDRR 35541	6 FEB 68	JRK

(AJ) THIS SHEET ADDED

8104002 BA

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 15 APR 66
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BA

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30884	9/	
AU	CHANGED PER TDRR 31282 DR. CHK APPD	11/ /66	
AV	CHANGED PER TDRR 32312 DR. CHK CAP APPD	1/ /67	
AW	CHANGED PER TDRR 32631 DR R.W.J. CHK A.C. APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR. CHK APPD	4/17/67	
AZ	REVISED PER TDRR 35215	19 DEC 67	JRK
BA	REVISED PER TDRR 35541	6 FEB 68	JRK

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	SPARES
					P/N MODIF	RFK NO.	NEW P/N														
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 8,11, 13 THRU 16 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													
48	PRINTING RECORDER	3,12	0104072	ECP-0391	1006965	8104211	1020211-021														*
49	COMPUTER TEST SET	3,5THRU 11,13THRU16 19THRU26	0104107	ECP-509	2014042-051	8104215	2014042-061	*													
50	BUFFER CIRCUIT AGC/GSE	1 THRU 10 11,13,15,16-22	0104108	ECP-0452	2014254-021 2014255 031	8104216	2014254-031 2014255-041								*						
51	POWER SUPPLY SPARES	13 & 14 13 & 14	0104128	ECP-575	1006931-2 1006935	8104242	1006432 1006433														*
52.0	COMPUTER DIAGNOSTIC CAPABILITY, GSE NOISE REDUCTION		0104124	ECP 0536, 0674		8104235															
52.1	COMPUTER TEST SET	3,5-8,11, 13-16,19-26	0104124	ECP 0536, 0674	2014042-061	8104238	2014042-071	*													
52.2	INTERCONNECTION SET G&N	2-4,6-10,12 13, 15-22	0104124	ECP 0536	2014255-041	8104239	2014255-051								*						

(AT) THIS SHEET ADDED

8104002 BA

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MATERIAL

RAYTHEON CO.
LEXINGTON MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 16 AUG 66
CHECKED 23 AUG 66
APPROVAL
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APPROVAL
NASA APPROVAL
MIT APPROVAL
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
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CODE IDENT NO. 49956
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NASA DRAWING NO. 8104002
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SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

[illegible]

8104002 BB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
	AW	CHANGED PER TDRR 32631 DR [illegible] CHK J.C. APPD	4/27/67	[illegible]
	AY	CHANGED PER TDRR 33450 DR [illegible] CHK [illegible] APPD	[illegible]/5/67	[illegible]
	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
	BA	REVISION STATUS CHANGED	8 FEB 68	JRK
	BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	LK
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.O. APPD [illegible]	11/12/65	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kiley CHK C.O. APPD [illegible]	[illegible]	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	4/4/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.O. APPD RCD	4/9/66	[illegible]
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	4/14/66	[illegible]
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD RCD	4/23/66	[illegible]
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD RCD	4/1/66	[illegible]
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD RCD	4/1/66	[illegible]
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.O. APPD RCD	[illegible]/66	[illegible]
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD RCD	[illegible]/66	[illegible]
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.O. APPD [illegible]	6/16/66	[illegible]
Z	CHANGED PER TDRR 27888 DR [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]
AA	CHANGED PER TDRR 27890 DR J. Holley CHK [illegible] APPD	7/22/66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	7/26/66	[illegible]
AC	CHANGED PER TDRR 27864 DR [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]
AD	CHANGED PER TDRR [illegible] DR [illegible] CHK [illegible]	[illegible]/66	[illegible]
AE	CHANGED PER TDRR 28044 DR [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AG	CHANGED PER TDRR 28084 DR T.P. Leonard CHK [illegible] APPD [illegible]	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/23/66	[illegible]
AL	CHANGED PER TDRR 29800 DR [illegible] CHK C.D. APPD [illegible]	[illegible]/66	[illegible]
AM	CHANGED PER TDRR 29884 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AN	CHANGED PER TDRR 30170 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AP	CHANGED PER TDRR 30547 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AR	CHANGED PER TDRR 30574 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AS	CHANGED PER TDRR 30882 DR J. Holley CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AT	CHANGED PER TDRR 30884 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]/66	[illegible]
AU	CHANGED PER TDRR 31282 DR [illegible] CHK [illegible] APPD [illegible]	10/25/66	[illegible]

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN [illegible] DATE 8 JUL 65
CHECKED D. [illegible] 13 JUL 65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO 8104002
SCALE NONE
SHEET 1 OF

8104002 BB

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR C. Battist CHK C.B. APPD		
	AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	4/20/67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	4/15/67	
(M)	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
(M)	BA	REVISION STATUS CHANGED	8 FEB 68	JRK
	BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/4/6	
N	CHANGED PER TDRR 25104 DR CHK A. Kopfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeFreeina APPD	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Bellanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kopfer APPD	3/23/66	
T	CHANGED PER TDRR 26863 DR CHK APPD P.E.D.	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D.	4/20/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeFreeina APPD P.E.D.	4/28/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D.		
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/15/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/1/66	
AA	CHANGED PER TDRR 27890 DR J. Holley CHK A. Kopfer APPD	7/28/66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	7/20/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kopfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kopfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kopfer APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK. APPD.	8/ /66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreeina APPD	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreeina APPD	8/13/66	
AL	CHANGED PER TDRR 29800 DR. CHK C. DeFreeina APPD	8/23/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kopfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/ /66	
AP	CHANGED PER TDRR 30547 DR CHK A. Kopfer APPD	9/ /66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kopfer APPD	9/ /66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kopfer APPD	9/4/66	
AT	CHANGED PER TDRR 30394 DR CHK A. Kopfer APPD	1/ /66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kopfer APPD	7/25/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104017	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

(M) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	* NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	WK
U	CHANGED PER TDRR 27329 DR E.K. Fuller CHK S. Rogowski APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR Tom Lehan CHK C.D. APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR P. Smith CHK C. Haywood APPD P.E.D	[illegible] 66	
Y	CHANGED PER TDRR 27707 DR Manning CHK C. DeGreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR R. Lebner CHK Manning APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J. Hadley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Batchet CHK CAP APPD	7/21/66	
AC	CHANGED PER TDRR 27894 DR J. Hadley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Hadley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR Manning CHK Holkovic APPD X.7.B	8/3/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X.7.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR A. Brown CHK A. Kupfer APPD X.7.3	8/10/66	
AJ	CHANGED PER TDRR 28068 DR E.K. Fuller CHK C. DeGreenia APPD X.7.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeGreenia APPD 7D7	8/23/66	
AL	CHANGED PER TDRR 29800 DR C. Batchet CHK C. DeGreenia APPD X73	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK A. Kupfer APPD X73	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD X73	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD X73	9/6/66	
AR	CHANGED PER TDRR 30574 DR B. Papia CHK A. Kupfer APPD X73	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Hadley CHK A. Kupfer APPD X73	9/14/66	
AT	CHANGED PER TDRR 30884 DR J. Wenden CHK A. Kupfer APPD 7D7	11/8/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK [illegible] APPD [illegible]	[illegible]	
AV	CHANGED PER TDRR 32312 DR P. Batchet CHK [illegible] APPD 7D7	1/11/67	7D7
AW	CHANGED PER TDRR 32631 DR R. [illegible] CHK J.C. APPD	1/23/67	
AY	CHANGED PER TDRR 33450 DR S. Roberts CHK [illegible] APPD	4/13/67	
Ⓜ AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
Ⓝ BA	REVISION STATUS CHANGED	8 FEB 68	JRK
BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC

8104002 BB

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN P. Leonard DATE 1/72166
CHECKED S. Rogowski 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 66
NASA APPROVAL
MIT APPROVAL [illegible] 4/6/66
MIT APPROVAL [illegible] 4/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014174		2014034-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014214-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014330		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2 THRU 9, 11, 13 14, 15	0104094	S.O.W. 5.2.4.2.	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R. Sch CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Bartlett CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR J. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Kelley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD R.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD	8/19/66	
AH	CHANGED PER TDRR 28090 DR. W. Brown CHK A. Kupfer APPD	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreeman APPD	8/1/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreeman APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Bartlett CHK C. DeFreeman APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Roberts CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR J. Roberts CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK A. Kupfer APPD	9/17/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD	10/1/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD	10/28/66	
AV	CHANGED PER TDRR 32312 DR. P. Bartlett CHK APPD	4-1-67	
AW	CHANGED PER TDRR 32631 DR R. CHK J.C. APPD	5/25/67	
AY	CHANGED PER TDRR 33450 DR J. Roberts CHK APPD	6/15/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISION STATUS CHANGED	8 FEB 68	JRK
BB	REVISION STATUS CHANGED	29 FEB 68	DL TRC

Ⓨ THIS SHEET ADDED

8104002 BB

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL 3/21/66
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT, SUB SYSTEM TEST	1 THRU 6	0104085	S.O.W. 5.2.4.2	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014263-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014042-021		2014042-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27890	7/27/66	
AB	CHANGED PER TDRR 27886 DR. P. Battist CHK APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S. Roberts CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR CHK A. Kupfer	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Holkam APPD	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD	8/9/66	
AH	CHANGED PER TDRR 28090 DR. W. Daum CHK. A. Kupfer APPD.	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreeman APPD	7/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreeman APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. P. Battist CHK C. DeFreeman APPD	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD	/66	
AT	CHANGED PER TDRR 30884 DR J. Gordon CHK A. Kupfer APPD	10/4/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD	10/25/66	
AV	CHANGED PER TDRR 32312 DR. P. Battist CHK APPD		
AW	CHANGED PER TDRR 32631 DR CHK J C APPD	1/27/67	
AY	CHANGED PER TDRR 33450 DR S. Roberts CHK J C. APPD	4/25/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISION STATUS CHANGED	8 FEB 68	JRK
BB	REVISION STATUS CHANGED	68	DL

8104002 BB

Ⓐ THIS SHEET ADDED

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DO NOT SCALE DRAWING

MATERIAL

NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 9/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X' CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP-0215 ECP-0329	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014496-011		2016409-011		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4 THRU 8	0104088	S.O.W. PARA 5.2.9.2	1020392	8104136	2014029-021		X												
					1014404		2014279-011		X												
					1014416		2014372-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014032-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014045-011		2014045-021	X													
					2014327-011		2014327-021	X													
					2014274-011		2014274-021	X													
					2014179		2016415	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014046-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064	[illegible]	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD X.70	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK G. Kupfer APPD X70	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. DeFreeina APPD K.7.B	8/4/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. DeFreeina APPD Z.74	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeFreeina APPD K70	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK G. Kupfer APPD X70	8/31/66	
AN	CHANGED PER TDRR 30170 DR [illegible] CHK G. Kupfer APPD X73	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK G. Kupfer APPD X70	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK G. Kupfer APPD X48	9/7/66	
AS	CHANGED PER TDRR 30882 DR [illegible] CHK G. Kupfer APPD X43	9/14/66	
AT	CHANGED PER TDRR 30884 DR [illegible] CHK G. Kupfer APPD Z.74	1/9/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK G. Kupfer APPD X70	10/25/66	
AV	CHANGED PER TDRR 32312 DR P. Battist CHK CAP APPD Z77	1/17/67	
AW	CHANGED PER TDRR 32631 DR RSJ CHK J C APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR [illegible] CHK [illegible] APPD	4/3/67	
(N) AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
(N) BA	REVISION STATUS CHANGED	8 FEB 68	JRK
BB	REVISION STATUS CHANGED	29 FEB 68	DL

(AF) THIS SHEET ADDED

8104002 BB

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

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NEXT ASSY	USED ON
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DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 31 MAR 66
CHECKED [illegible] 31 MAR 66
APPROVAL [illegible] 13 MAR 66
APPROVAL [illegible] 4/13/66
APPROVAL [illegible] 4/13/66
NASA APPROVAL [illegible] METZGER
MIT APPROVAL W. [illegible]
MIT APPROVAL [illegible] 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTERCONNECTION SET, 'X' CONFIGURATION COMPONENTS	16 THRU 22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					X2014484-011		2014484-011								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2016334-011		2016334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	5-8, 11, 13-16, 19, 20-26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	5-8, 11, 13-16, 19, 20-26	0104084	ECP R-0405	2014042	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021 2016310-011 2014199-011	8104200	2014268-031 2016310-021 2014199-021									X					
44	AGC/GSE INTERCONN SET G&N TEST	1 THRU 9, 11, 13, 15 THRU 22	0104070	ECP 0389	2014255-021 2016311-011 2014137-011	8104201	2014255-031 2016311-021 2014137-021								X						
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR 28868	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	7/29/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK APPD	10/5/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	10/25/66	
AV	CHANGED PER TDRR 32312 DR CHK CAP APPD	11/2/66	
AW	CHANGED PER TDRR 32631 DR CHK J C. APPD	3/3/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	4/7/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISED PER TDRR 35541	6 FEB 68	JRK
BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC

(AJ) THIS SHEET ADDED

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL 4/18/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BB

8104002 BB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	SPARES
					P/N MODIF	RFK NO.	NEW P/N														
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 8,11, 13 THRU 16 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													
48	PRINTING RECORDER	312	0104072	ECP-0391	1006965	8104211	1020211-021														*
49	COMPUTER TEST SET	3,5THRU[illegible] 11,13THRU16 19THRU26	0104107	ECP-509	2014042-051	8104215	2014042-061	*													
50	BUFFER CIRCUIT AGC/GSE	1 THRU 10 11,13,15,16-22	0104108	ECP-0452	2014254-021 2014255 031	8104216	2014254-031 2014255-041								*						
51	POWER SUPPLY SPARES	13 ¢ 14 13 ¢ 14	0104128	ECP-575	1006931-2 1006935	8104242	1006432 1006433														*
52.0	COMPUTER DIAGNOSTIC CAPABILITY, GSE NOISE REDUCTION		0104124	ECP 0536, 0674		8104235															
52.1	COMPUTER TEST SET	3,5-8, 11, 13-16, 19-26	0104124	ECP 0536, 0674	2014042-061	8104238	2014042-071	*													
52.2	INTERCONNECTION SET G&N	2-4, 6-10, 12 13, 15-22	0104124	ECP 0536	2014255-041	8104239	2014255-051								*						
53	AGC HANDLING FIXTURE	3-11, 13-15	0104106	ECP 506	2014282-021	8104214	2014282-031							*							

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30884	9/1/66	
AU	CHANGED PER TDRR 31282 DR. CHK APPD	11/29/66	
AV	CHANGED PER TDRR 32312 DR. CHK CAP APPD	4/13/67	
AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	8/25/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	11/15/67	
AZ	REVISED PER TDRR 35215	19 DEC 67	JRK
BA	REVISED PER TDRR 35541	6 FEB 68	JRK
BB	REVISED PER TDRR 35706	29 FEB 68	DL JAC

Ⓐ THIS SHEET ADDED

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RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 16 AUG 66
CHECKED 23 AUG 66
APPROVAL
APPROVAL 8/23/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
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SCALE NONE
WT
SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BC

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED, MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	SA-42	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-6	0104018	SA-77	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-9,11	0104019	SA-77	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	2-9	0104020	SA-77	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	4-16	0104014	SA-77	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	2,4-8	0104017	SA-77	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	SA-77	1020001-1	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	1-6	0104009	SA-42	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	3-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	10,12,16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-7, 10-13,15	0104043	SA-42	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-5,7, 8,10,11	0104037	ECP141,ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-5,7, 8,10,11	0104037		1020188	8104051	1020435					X									
		2-5,7, 8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR CHK APPD	[illegible]	
	AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	[illegible] 67	
	AY	CHANGED PER TDRR 33450 DR CHK APPD	[illegible] 67	
	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
	BA	REVISION STATUS CHANGED	8 FEB 68	JRK
	BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC
	BC	REVISED PER TDRR 35892	21 MAR 68	JJJ

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21355	[illegible]	
K	CHANGED PER TDRR 22895 DR CHK APPD	[illegible]	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	[illegible]	
M	CHANGED PER TDRR 24224 DR W. Kiley CHK C.D. APPD	[illegible]	
N	CHANGED PER TDRR 25104 DR CHK	[illegible] 66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	[illegible] 66	
R	CHANGED PER TDRR 26683 DR CHK APPD	[illegible]	
S	CHANGED PER TDRR 26675 DR CHK APPD	[illegible]	
T	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible] 66	
U	CHANGED PER TDRR 27329 DR CHK APPD	[illegible] 66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	[illegible]	
W	CHANGED PER TDRR 27706 DR CHK APPD	[illegible]	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	[illegible]	
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]	
AA	CHANGED PER TDRR 27890 DR J. Kelley CHK APPD	[illegible] 66	
AB	CHANGED PER TDRR 27886 DR CHK APPD	[illegible]	
AC	CHANGED PER TDRR [illegible] DR J. Kelley CHK APPD	[illegible]	
AD	CHANGED PER TDRR [illegible] DR CHK	[illegible]	
AE	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible]	
AF	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible]	
AG	CHANGED PER TDRR [illegible] DR CHK	[illegible]	
AH	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible]	
AJ	CHANGED PER TDRR 29068 DR CHK C.D. APPD	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	[illegible]	
AL	CHANGED PER TDRR [illegible] DR CHK C.D. APPD	[illegible]	
AM	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible]	
AN	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible] 66	
AP	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible]	
AR	CHANGED PER TDRR 30574 DR CHK APPD	[illegible] 66	
AS	CHANGED PER TDRR 30882 DR J. Kelley CHK APPD	[illegible]	
AT	CHANGED PER TDRR [illegible] DR CHK APPD	[illegible]	
AU	CHANGED PER TDRR 31282 DR CHK APPD	[illegible] 66	

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 8 JUL 65
CHECKED 13 JUL 65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF

8104002 BC

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AV	CHANGED PER TDRR 32312 DR C. Cattel CHK CAP APPD Z97	1/10/67	
	AW	CHANGED PER TDRR 32631 DR R.W.J. CHK J.C. APPD	1/20/67	
	AY	CHANGED PER TDRR 33450 DR S. Roberts CHK Williams APPD	4/15/67	
	AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
	BA	REVISION STATUS CHANGED	8 FEB 68	JRK
	BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC
	BC	REVISED PER TDRR 35892	21 MAR 68	JJJ

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeFreema APPD PED	3/9/66	
R	CHANGED PER TDRR 26683 DR D. Bl CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD PED	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Biron CHK Williams APPD PED	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeFreema APPD PED	4/22/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PED	[illegible]/66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD PED	7/6/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	7/1/66	
AA	CHANGED PER TDRR 27890 DR J. Haney CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C. Cattel CHK CAP APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR CHK A. Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J. Holley CHK A. Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK Williams APPD L.7.3.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J. F. Leonard CHK A. Kupfer APPD L.7.3.	8/3/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD. L.7.3	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreema APPD L.7.3	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreema APPD L.7.3	8/3/66	
AL	CHANGED PER TDRR 29800 DR C. Cattel CHK C. DeFreema APPD L.7.3	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD L.7.3	8/31/66	
AN	CHANGED PER TDRR 30170 DR J. Haney CHK A. Kupfer APPD L.7.3	9/[illegible]/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD L.7.3	9/[illegible]/66	
AR	CHANGED PER TDRR 30574 DR B. Papia CHK A. Kupfer APPD L.7.3	9/7/66	
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD L.7.3	9/14/66	
AT	CHANGED PER TDRR 30334 DR CHK A. Kupfer APPD L.7.3	9/13/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD L.7.3	9/[illegible]/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	1-6	0104042	ECP 390	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	CALIBRATION CONSOLE	1-6	0104072	ECP 390, 331	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18 AND ITEM NO. 9
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	5-20	0104073	SA-42	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	ECP 133, SA-42	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BE

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 7,8,10,11	0104086	ECP 172	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	~~1~~	~~0104097~~	~~ECPR-331~~	~~1020344-011~~	~~8104167~~	~~1020344-021~~				~~X~~										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-11	0104090	SA-42	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD P.E.D	23 [illegible] 66	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C DeFreenia APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR R Selmer CHK [illegible] APPD	7/11/66	
AA	CHANGED PER TDRR 27890 DR J Kelley CHK G Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR P. Battist CHK CAP APPD	7/28/66	
AC	CHANGED PER TDRR 27884 DR J. Kelley CHK G. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR [illegible] CHK G Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR D. Kelley CHK G Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR [illegible] CHK [illegible] APPD X.7.B	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK G. Kupfer APPD X.7.B	8/9/66	
AH	CHANGED PER TDRR 28090 DR L Brown CHK G. Kupfer APPD X.7.B	8/10/66	
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C.DeFreenia APPD X.7.B	8/12/66	
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C.DeFreenia APPD X.7.B	8/23/66	
AL	CHANGED PER TDRR 29800 DR. [illegible] CHK C.DeFreenia APPD X.7.B	8/29/66	
AM	CHANGED PER TDRR 29884 DR [illegible] CHK G.Kupfer APPD X.7.B	8/31/66	
AN	CHANGED PER TDRR 30170 DR [illegible] CHK G Kupfer APPD X.7.B	9/1/66	
AP	CHANGED PER TDRR 30547 DR [illegible] CHK G. Kupfer APPD X.7.B	9/6/66	
AR	CHANGED PER TDRR 30574 DR [illegible] CHK G Kupfer APPD X.7.B	9/7/66	
AS	CHANGED PER TDRR 30882 DR J Kelley CHK G. Kupfer APPD X.7.B	9/14/66	
AT	CHANGED PER TDRR 30684 DR [illegible] CHK G.Kupfer APPD X.7.B	11/8/66	
AU	CHANGED PER TDRR 31282 DR [illegible] CHK G.Kupfer APPD X.7.B	10/24/66	
AV	CHANGED PER TDRR 32312 DR P.Battist CHK CAP APPD X.7.B	1/11/67	
AW	CHANGED PER TDRR 32631 DR [illegible] CHK J.C. APPD	1/27/67	
AY	CHANGED PER TDRR 33150 DR [illegible] CHK [illegible] APPD	4/13/67	
(M) AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
(N) BA	REVISION STATUS CHANGED	8 FEB 68	JRK
(m) BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC
BC	REVISED PER TDRR 35892	21 MAR 68	JJ

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 1/7/66
CHECKED [illegible] 18 FEB 66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible] 3/2/66
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL [illegible] 4/4/66
MIT APPROVAL [illegible] 4/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 8104002
SCALE NONE | WT | SHEET 3 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BE

8104002 BC

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
29	COMPUTER TEST SET	5-8, 11, 13-16, 19	0104087	ECP 239, 344, 364, SA-42	1020341	8104132	2014042-021	X													
					1014142		2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020346		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2-4, 6-9, 12, 13, 15	0104094	SA-42	1020313	8104067	2014255-021								X						
					1020307		2014254-021								X						
					1020241		2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707		
Z	CHANGED PER TDRR 27888 DR R Silver CHK APPD	7/66	
AA	CHANGED PER TDRR 27890 DR J Melling CHK A. Kupfer APPD	7/27/66	
AB	CHANGED PER TDRR 27886 DR C Battist CHK APPD	7/29/66	
AC	CHANGED PER TDRR 27884 DR J Melling CHK A. Kupfer APPD	8/1/66	
AD	CHANGED PER TDRR 28042 DR S Roberts CHK A Kupfer	8/3/66	
AE	CHANGED PER TDRR 28044 DR J Melling CHK A Kupfer APPD	8/4/66	
AF	CHANGED PER TDRR 28064 DR CHK APPD R.F.B.	8/5/66	
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X73	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD X73	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreemia APPD X.73	8/12/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreemia APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR. C Battist CHK C. DeFreemia APPD X73	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD X73	8/31/66	
AN	CHANGED PER TDRR 30170 DR S Roberts CHK A. Kupfer APPD X73	9/1/66	
AP	CHANGED PER TDRR 30547 DR S Roberts CHK A. Kupfer APPD	9/1/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD X73	9/7/66	
AS	CHANGED PER TDRR 30882 DR J Melling CHK A. Kupfer APPD X73	9/17/66	
AT	CHANGED PER TDRR 30384 DR CHK A Kupfer APPD	10/3/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD X73	10/25/66	
AV	CHANGED PER TDRR 32312 DR. C. Battist CHK APPD	1/67	
AW	CHANGED PER TDRR 32631 DR R CHK J.C APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR S Roberts CHK APPD	4/5/67	
AZ	REVISION STATUS CHANGED	DEC 67	JRK
BA	REVISION STATUS CHANGED	8 FEB 68	JRK
BB	REVISION STATUS CHANGED	29 FEB 68	DL
BC	REVISED PER TDRR 35892	21 MAR 68	JJJ

Ⓨ THIS SHEET ADDED

8104002 BC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N-GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002

SCALE NONE WT SHEET 4 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BC

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TESTSET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN SET G&N TEST	INTERCONN SET SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
31.	INTERCONNECTION KIT SUB-SYSTEM TEST	1 THRU 6	0104085	SA-42	1020312	8104069	2014268-021									X					
					1020312-011											X					
					1006668-2		1006482-002									X					
					1006668-3		1006482-003									X					
					1006668-4		1006482-004									X					
					1006668-5		1006482-005									X					
					1006668-6		1006482-006									X					
					1006668-7		1006482-007									X					
					1006668-8		1006482-008									X					
					1006668-9		1006482-009									X					
					1020095		2014489-011									X					
					1020364		2014418-011									X					
					1020291		2014406									X					
					1006668-1		1006482-001									X					
32.	INTERCONNECTION SET, G&N TEST MARRIAGE CHANGES	16 THRU 22	0104050	ECP-0329	2014255-011	8104192	2014255-021								X						
					2014254-011		2014254-021								X						
					2014267-011		2014267-021								X						
					2014259-011		2014259-021								X						
					2014260-011		2014260-021								X						
					2014262-011		2014262-021								X						
					2014265-011		2014265-021								X						
33.	INTERCONNECTION SET, SUB SYSTEM MARRIAGE CHANGES	10 THRU 13	0104055	ECP-0329	2014268-011	8104193	2014268-021									X					
					2014486-011		2016406-011									X					
					2014493-011		2016408-011									X					
34.	OPERATION CONSOLE, "X" CONFIGURATION COMPONENTS	10 THRU 13	0104098	ECP-0215	X2014257-011	8104175	2014257-011		X												
					X2014302-011		2014302-011		X												
					X2014272-011		2014272-011		X												
					2014024-021		2014024-021		X												
35	COMPUTER TEST SET "X" CONFIGURATION COMPONENTS	20 THRU 26	0104099	ECP-0215	X2014047-011	8104190	2014047-011	X													
					X2014153-011		2014153-011	X													
					X2014154-011		2014154-011	X													
					X2014481-011		2014481-011	X													
					X2014480-011		2014480-011	X													
					2014092-021		2014092-021	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AA	THIS SHEET ADDED PER TDRR 27840	7/ /66	[illegible]
AB	CHANGED PER TDRR 27886 DR [illegible] CHK [illegible] APPD	[illegible]/66	[illegible]
AC	CHANGED PER TDRR 27884 DR J. Holley CHK A. Kupfer APPD	[illegible]/66	[illegible]
AD	CHANGED PER TDRR 28042 DR [illegible] CHK A. Kupfer	[illegible]	[illegible]
AE	CHANGED PER TDRR 28049 DR [illegible] CHK A. Kupfer	/66	[illegible]
AF	CHANGED PER TDRR 28064 DR [illegible] CHK Holkan APPD L.T.O.	8/5/66	[illegible]
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD L.T.S.	8/9/66	[illegible]
AH	CHANGED PER TDRR 28090 DR [illegible] CHK A. Kupfer APPD. [illegible]	8/10/66	[illegible]
AJ	CHANGED PER TDRR 28068 DR [illegible] CHK C. [illegible] APPD L.T.S.	[illegible]/66	[illegible]
AK	CHANGED PER TDRR 29055 DR [illegible] CHK C. [illegible] APPD L.T.T.	8/23/66	[illegible]
AL	CHANGED PER TDRR 29800 DR [illegible] CHK C. [illegible] APPD L.T.S.	8/24/66	[illegible]
AM	CHANGED PER TDRR 29864 DR [illegible] CHK A. Kupfer APPD L.T.S.	8/31/66	[illegible]
AN	CHANGED PER TDRR 30170 DR J. Holley CHK A. Kupfer APPD L.T.S.	9/1/66	[illegible]
AP	CHANGED PER TDRR 30547 DR [illegible] CHK A. Kupfer APPD L.T.S.	9/6/66	[illegible]
AR	CHANGED PER TDRR 30574 DR [illegible] CHK A. Kupfer APPD L.T.S.	9/2/66	[illegible]
AS	CHANGED PER TDRR 30882 DR J. Holley CHK A. Kupfer APPD L.T.S.	9/[illegible]/66	[illegible]
AT	CHANGED PER TDRR 30884 DR J. Gardner CHK A. Kupfer APPD L.T.T.	10/4/66	[illegible]
AU	CHANGED PER TDRR 31282 DR [illegible] CHK A. Kupfer APPD L.T.S.	10/25/66	[illegible]
AV	CHANGED PER TDRR 32312 DR. [illegible] CHK [illegible] APPD L.T.T.	[illegible]	[illegible]
AW	CHANGED PER TDRR 32631 DR [illegible] CHK J C APPD	1/27/67	[illegible]
AY	CHANGED PER TDRR 33450 DR [illegible] CHK J C APPD J.S.R.	4/25/67	JSR
(N) AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
(P) BA	REVISION STATUS CHANGED	8 FEB 68	JRK
(S) BB	REVISION STATUS CHANGED	29 FEB 68	DI JAC
BC	REVISED PER TDRR 35892	21 MAR 68	JJJ

(AA) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN [illegible] DATE 31 MAR 66
CHECKED [illegible] 31 MAR 66
APPROVAL [illegible]
APPROVAL [illegible] 4/7/66
APPROVAL
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible] 4/8/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 5 OF 5

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BC

8104002 BC

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
36	OPERATION CONSOLE, VOLTAGE MEASUREMENT & X CONFIGURATION COMPONENTS	10,11,12,13	0104036	ECP 258	2014024-011	8104191	2014024-021		X												
					2014079-011		2014079-021		X												
					X2014341-011		2014341-021		X												
					2014340-011		2014340-021		X												
					2014470-011		[illegible]		X												
					X2014183-011		2016412-011		X												
					2014277		2016401		X												
					X2014178-011		2014178-011		X												
					X2014180-011		2014180-011		X												
					X2014181-011		2014181-011		X												
					X2014184-011		2014184-011		X												
					2014297-011		2014297-021		X												
37	OPERATION CONSOLE, BLOCK I (100S) TO BLOCK II	2,4-7,9	0104088	ECP 89, SA-42	1020342	8104136	2014024-081		X												
					1014404		2014279-011		X												
					1014416		2014308-011		X												
					1014453		2014272-011		X												
					1014372		2014359		X												
					1020070		2014371		X												
					1014388		2014079-021		X												
					1020303		2014257-011		X												
38	COMPUTER TEST SET MARRIAGE CHANGES	20 THRU 26	0104053	ECP-0329 ECP-0344	2014042-011	8104181	2014042-021	X													
					2014036-011		2014036-021	X													
					2014219-011		2014219-021	X													
					2014228-011		2014228-021	X													
					2014037-011		2014037-021	X													
					2014224-011		2014224-021	X													
					2014229-011		2014229-021	X													
					2014040-011		2014040-021	X													
					2014375-011		2014375-021	X													
					2014467		2016416	X													
					2014377-011		2014377-021	X													
					2014378-011		2014378-021	X													
					2014041-011		2014041-021	X													
					2014352-011		2014352-021	X													
					2014315-011		2014315-021	X													
					2014336-011		2014336-021	X													
					2014045-011		2014045-021	X													
					2014327-011		2014327-021	X													
					2014294-011		2014294-021	X													
					2014?79		2016419	X													
					2014366-011		2014366-021	X													
					2014362-011		2014362-021	X													
					2014046-011		2014046-021	X													
					2014275-011		2014275-041	X													
					2014275-021		2014275-051	X													
					2014275-031		2014275-061	X													

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AF	THIS SHEET ADDED PER TDRR 28064		
AG	CHANGED PER TDRR 28084 DR J.P. Leonard CHK A. Kupfer APPD X76	8/9/66	
AH	CHANGED PER TDRR 28090 DR W. Brown CHK A. Kupfer APPD X78	8/10/66	
AJ	CHANGED PER TDRR 28068 DR CHK C. DeFreeman APPD R.7.B	8/?/66	
AK	CHANGED PER TDRR 29055 DR CHK C. DeFreeman APPD	8/23/66	
AL	CHANGED PER TDRR 29800 DR P. Battist CHK C. DeFreeman APPD X78	8/29/66	
AM	CHANGED PER TDRR 29884 DR CHK A. Kupfer APPD X78	8/31/66	
AN	CHANGED PER TDRR 30170 DR S. Roberts CHK A. Kupfer APPD X78	9/1/66	
AP	CHANGED PER TDRR 30547 DR S. Roberts CHK A. Kupfer APPD X78	9/7/66	
AR	CHANGED PER TDRR 30574 DR CHK A. Kupfer APPD X78	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK A. Kupfer APPD X78	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK A. Kupfer APPD X77	11/8/66	
AU	CHANGED PER TDRR 31282 DR CHK A. Kupfer APPD X78	10/25/66	
AV	CHANGED PER TDRR 32312 DR P. Battist CHK APPD X77	1/17/67	
AW	CHANGED PER TDRR 32631 DR RSJ CHK J.C. APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR S. Roberts CHK APPD	4/?/67	
Ⓝ AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
Ⓝ BA	REVISION STATUS CHANGED	8 FEB 68	JRK
Ⓝ BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC
BC	REVISED PER TDRR 35892	21 MAR 68	JJJ

(AF) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 31 MAR 66
CHECKED 31 MAR 66
APPROVAL
APPROVAL B. O'Connel 8/13/66
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 6 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BC

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
39	G&N INTER-CONNECTION SET 'X' CONFIGURATION COMPONENTS	16THRU22	0104067	ECP-0215	2014255-021	8104180	2014255-021								X						
					X2014463-011		2014463-011								X						
					X2014462-011		2014462-011								X						
					X2014462-021		2014462-021								X						
					X2014462-031		2014462-031								X						
					[illegible]		[illegible]								X						
					X2014137-011		2014137-011								X						
					X2014483-011		2014483-011								X						
					X2014482-011		2014482-011								X						
					X2014334-011		2014334-011								X						
40	COMPUTER TEST SET, SECOND MARRIAGE CHANGE	5-8, 11, 13-16, 19, 20-26	0104016	ECP-0329R1	2014042-021	8104202	2014042-031	X													
					2014036-021		2014036-031	X													
					2014219-021		2014219-031	X													
					2014228-021		2014228-031	X													
					2014041-021		2014041-031	X													
					2014336-021		2014336-031	X													
					2014046-021		2014046-031	X													
					2014045-021		2014045-031	X													
41	COMPUTER SIMULATOR, REPLACE NAMEPLATE	16 THRU 21	0104048	ECP R-0238	2014048-011	8104203	2014048-011			X											
42	COMPUTER TEST SET THIRD MARRIAGE CHANGE	5-8, 11, 13-16, 19, 20-26	0104084	ECP R-0405	2014042-031	8104207	2014042-041	X													
					2014041		2014041-041	X													
					2014336-031		2014336-041	X													
43	AGC/GSE INTERCONN SET SUB-SYSTEM TEST	1 THRU 6 10 THRU 13	0104070	ECP 0389	2014268-021		2014268-031									X					
					2016310-011	8104200	2016310-021														
					2014199-011		2014199-021														
44	AGC/GSE INTERCONN SET G&N TEST	2-4, 6-9, 12, 13, 15-22	0104070	ECP 0389	2014255-021	8104201	2014255-031								X						
					2016311-011		2016311-021														
					2014137-011		2014137-021														
45	AGC HANDLING FIXTURE PROTECTIVE PLASTIC CAP	1-3 7-21	0104089	ECP-0247	1020001-4	8104162	1020001-5							X							

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
AJ	THIS SHEET ADDED PER TDRR [illegible]	[illegible]	
AK	CHANGED PER TDRR 29055 DR CHK APPD	6/23/66	
AL	CHANGED PER TDRR 29800 DR. CHK APPD	7/27/66	
AM	CHANGED PER TDRR 29884 DR CHK APPD	8/31/66	
AN	CHANGED PER TDRR 30170 DR CHK APPD	9/1/66	
AP	CHANGED PER TDRR 30547 DR CHK APPD	9/6/66	
AR	CHANGED PER TDRR 30574 DR CHK APPD	9/7/66	
AS	CHANGED PER TDRR 30882 DR CHK APPD	9/14/66	
AT	CHANGED PER TDRR 30884 DR CHK APPD	11/8/66	
AU	CHANGED PER TDRR 31282 DR CHK APPD	11/30/66	
AV	CHANGED PER TDRR 32312 DR CHK APPD	1/17/67	
AW	CHANGED PER TDRR 32631 DR CHK J.C. APPD	2/7/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	4/7/67	
AZ	REVISION STATUS CHANGED	19 DEC 67	JRK
BA	REVISED PER TDRR 35541	6 FEB 68	JRK
BB	REVISION STATUS CHANGED	29 FEB 68	DL JAC
BC	REVISED PER TDRR 35892	21 MAR 68	JJ

(AJ) THIS SHEET ADDED

8104002 BC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE 15 APR 66
CHECKED 15 APR 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 7 OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 BC

SYM	DESCRIPTION	DATE	APPROVED
AT	THIS SHEET ADDED PER TDRR 30884	9/1/66	
AU	CHANGED PER TDRR 31282 DR. CHK APPD	11/4/66	
AV	CHANGED PER TDRR 32312 DR. CHK CAP APPD	4/12/67	
AW	CHANGED PER TDRR 32631 DR CHK APPD	1/25/67	
AY	CHANGED PER TDRR 33450 DR CHK APPD	4/7/67	
AZ	REVISED PER TDRR 35215	19 DEC 67	JRK
BA	REVISED PER TDRR 35541	6 FEB 68	JRK
BB	REVISED PER TDRR 35706	29 FEB 68	DL JAC
BC	REVISED PER TDRR 35892	21 MAR 68	JJJ

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G & N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	SPARES
					P/N MODIF	RFK NO.	NEW P/N														
46	AGC HANDLING FIXTURE	1 & 2	0104096	ECPR-0358	2014282-011	8104172	2014282-021							*							
47	COMPUTER TEST SET	5 THRU 8, 11, 13 THRU 16 19 THRU 26	0104100	ECP-439	2014042-041	8104204	2014042-051	*													
48	PRINTING RECORDER	312	0104072	ECP-0391	1006965	8104211	1020211-021														*
49	COMPUTER TEST SET	3,5THRU8 11,13THRU16 19THRU26	0104107	ECP-509	2014042-051	8104215	2014042-061	*													
50	BUFFER CIRCUIT AGC/GSE	2-4, 6-9, 12, 13, 15-22	0104108	ECP-0452	2014254-021 2014255 031	8104216	2014254-031 2014255-041								*						
51	POWER SUPPLY SPARES	13 & 14 13 & 14	0104128	ECP-575	1006931-2 1006935	8104242	1006432 1006433														*
52.0	COMPUTER DIAGNOSTIC CAPABILITY, GSE NOISE REDUCTION		0104124	ECP 0536, 0674		8104235															
52.1	COMPUTER TEST SET	3,5-8, 11, 13-16, 19-26	0104124	ECP 0536, 0674	2014042-061	8104238	2014042-071	*													
52.2	INTERCONNECTION SET G & N	2-4, 6-10, 12 13, 15-22	0104124	ECP 0536	2014255-041	8104239	2014255-051								*						
53	AGC HANDLING FIXTURE	3-11, 13-15	0104106	ECP 506	2014282-021	8104214	2014282-031							*							

Ⓐ THIS SHEET ADDED

8104002 BC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 16 AUG 66
CHECKED 23 AUG 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G & N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 8 OF 8

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	2-1-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK APPD	1 MAR 65	RO

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.P.		RETROFIT KIT ASSEMBLY DRAWING											
						COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT	
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004						

NOTES:

1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN DATE 12 AUG 64
CHECKED J. W. Miles 13 AUG 64
APPROVAL H. Moore 14 AUG 64
APPROVAL 14 Aug 64
APPROVAL 14 64
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL C Sperling 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

A 8104002

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608		
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Logan APPD	1 MAR 65	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R		RETROFIT KIT ASSEMBLY DRAWING									
						SHIPPING CONTAINERS		INTERCONN KIT G&N TEST		INTERCONN KIT SUB SYSTEM TEST		ALIGN. FIXTURE ASSY NAV DSKY			
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
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FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN DATE
CHECKED 64
APPROVAL 23 NOV 64
APPROVAL 11/23/64
APPROVAL 64
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL C Snedley 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002

SCALE NONE
WT
SHEET 2 OF 2

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

A 8104002

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	12-1-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK f.Gaez APPD	1 MAR 65	KeG
B	CHANGED PER TDRR 16504 DR CHK f.Gaez APPD	3/11/65	KrB

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R.		RETROFIT KIT ASSEMBLY DRAWING											
						COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT	
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004						
2	RELOCATION OF LOGIC PLATE P&M CHASSIS	3-12	0104008	R-00003		N/A	8104008										

NOTES:

1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN DATE 12 AUG 64
CHECKED Jim W Miles 13 AUG 64
APPROVAL 14 AUG 64
APPROVAL 14 Aug 64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

B 8104002

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	12-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK Logan APPD	1 MAR 65	KCO
B	CHANGED PER TDRR 16504 DR CHK Hoyer APPD D Conley	11 MAR 65	KCD

						RETROFIT KIT ASSEMBLY DRAWINGS											
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R		SHIPPING CONTAINERS		INTERCONN KIT G&N TEST		INTERCONN KIT SUB SYSTEM TEST		ALIGN. FIXTURE ASSY NAV DSKY					
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN DATE
CHECKED 18 NOV 64
APPROVAL 23 NOV 64
APPROVAL D. O'Bryant 11/23/64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL C Snarling 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
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SHEET 2 OF 2

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	1-1-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Cogez APPD	1 MAR 65	K.B
B	CHANGED PER TDRR 16509 DR CHK F. Cogez APPD	3/11/65	K.B
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD AJM	19 MAR 65	K.B

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.P.		RETROFIT KIT ASSEMBLY DRAWING											
						COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT	
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004						
2	RELOCATION OF LOGIC PLATE D&M CHASSIS	3-12	0104008	R-00008		N/A	8104008										
3	SEE SHEET 2	1-8	0104018	R-00018													
4	SEE SHEET 2	1-11	0104019	R-00019													
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R-00020												N/A	8104032

NOTES:

1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

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FRACTIONS ± DECIMALS ± ANGLES ±

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MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN DATE 12 AUG 64
CHECKED Jon W Miles 13 AUG 64
APPROVAL 14 AUG 64
APPROVAL 14 Aug 64
APPROVAL 14 64
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	12-1-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Logan APPD	1 MAR 65	KEO
B	CHANGED PER TDRR 16506 DR CHK Hogan APPD	11 MAR 65	RCM
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	KEO

<table>
<tr><th rowspan="3">ITEM NO.</th><th rowspan="3">DESCRIPTION</th><th rowspan="3">EFF NO. S/N</th><th rowspan="3">R.I.B. NO.</th><th colspan="2" rowspan="2">E.C.R</th><th colspan="12">RETROFIT KIT ASSEMBLY DRAWING</th></tr>
<tr><th colspan="2">SHIPPING CONTAINERS</th><th colspan="2">INTERCONN KIT G&N TEST</th><th colspan="2">INTERCONN KIT SUB SYSTEM TEST</th><th colspan="2">ALIGN. FIXTURE ASSY NAV DSKY</th><th colspan="2"></th><th colspan="2"></th></tr>
<tr><th>NO.</th><th>AUTH DATE</th><th>MOD NO.</th><th>DWG NO.</th><th>MOD NO.</th><th>DWG NO.</th><th>MOD NO.</th><th>DWG NO.</th><th>MOD NO.</th><th>DWG NO.</th><th>MOD NO.</th><th>DWG NO.</th><th>MOD NO.</th><th>DWG NO.</th></tr>
<tr><td>3</td><td>INTERCONN KIT, BLOCK I & 100 SER. CAPABILITY</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>N/A</td><td>8104028</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td>INTERCONN KIT, BLOCK I & 100 SER. CAPABILITY</td><td></td><td></td><td></td><td></td><td></td><td></td><td>N/A</td><td>8104027</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

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LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

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TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN D. Mongo DATE
CHECKED 64
APPROVAL N W 23 Nov 64
APPROVAL D. 11/23/64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL C Sneden 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

C 8104002

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						RETROFIT KIT ASSEMBLY DRAWING											
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.P.		COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT	
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004						
2	RELOCATION OF LOGIC PLATE DLM CHASSIS	3-12	0104008	R-00008		N/A	8104008										
3	SEE SHEET 2	1-8	0104018	R-00018													
4	SEE SHEET 2	1-11	0104019	R-00019													
5	REPLACE CABLE W32 WITH W211	1-9	0104020	R-00020												N/A	8104032
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	R-00014		N/A	8104019										
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	R-00017				N/A	8104015								
8	CHANGE COLD PLATE & MANIFOLD, ADD GRD STRAP	1-3	0104004	R-00004								N/A	8104007				
9	ADD DIGITAL OHMMETER	1-6	0104009	R-00009										N/A	8104010		

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	[illegible]	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK [illegible] APPD [illegible]	1 MAR 65	KCB
B	CHANGED PER TDRR 16504 DR [illegible] CHK [illegible] APPD [illegible]	3/11/65	KCB
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK [illegible] APPD [illegible]	19 MAR 65	KCB
D	CHANGED PER TDRR 16783 DR [illegible] CHK [illegible] APPD [illegible]	30 MAR 65	KCB

NOTES:

1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

FINAL	
NEXT ASSY	USED ON
APPLICATION	

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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN [illegible] DATE 12 AUG 64
CHECKED [illegible] 13 AUG 64
APPROVAL [illegible] 14 AUG 64
APPROVAL [illegible] 14 Aug 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible] 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 2

D 8104002

NOTICE - WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER. AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

						RETROFIT KIT ASSEMBLY DRAWING											
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R		SHIPPING CONTAINERS		INTERCONN KIT G&N TEST		INTERCONN KIT SUB SYSTEM TEST		ALIGN. FIXTURE ASSY NAV DSKY					
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
3	INTERCONN KIT, BLOCK I & 100 SER. CAPABILITY									N/A	8104028						
4	INTERCONN KIT, BLOCK I & 100 SER. CAPABILITY							N/A	8104027								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	12-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK APPD	1 MAR 5	
B	CHANGED PER TDRR 16508 DR CHK APPD	11 MAR 65	KL57
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	
D	CHANGED PER TDRR 16783 DR CHK APPD	30 MAR 65	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

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DIMENSIONS ARE IN INCHES
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DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN DATE
CHECKED 18 NOV 64
APPROVAL 23 NOV 64
APPROVAL 11/23/64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL C 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

D 8104002

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

						RETROFIT KIT ASSEMBLY DRAWING											
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.P.		COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT	
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004						
2	RELOCATION OF LOGIC PLATE D&M CHASSIS	3-12	0104008	R-00008		N/A	8104008										
3	SEE SHEET 2	1-8	0104018	R-00018													
4	SEE SHEET 2	1-11	0104019	R-00019													
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R-00020												N/A	8104032
6	C.T.S KIT, BLOCK I & 100 SER. CAPABILITY	3-10	0104014	R-00014		N/A	8104019										
7	O.C. KIT, BLOCK I & 100 SER CAPABILITY	1-8	0104017	R-00017				N/A	8104015								
8	CHANGE COLD PLATE & MANIFOLD, ADD GRD STRAP	1-3	0104004	R-00004								N/A	8104007				
9	ADD DIGITAL OHMMETER	1-6	0104009	R-00009										N/A	8104010		
10	COMPONENT CHANGE ON PANEL A1	12&14	0104034	R-10015		N/A	8104049										

NOTES:
1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	12-1-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK J. Lopez APPD	1 MAR 65	KB
B	CHANGED PER TDRR 16504 DR CHK J. Lopez APPD	3/11/65	KB
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	KB
D	CHANGED PER TDRR 16783 DR R CHK APPD	30 MAR 65	KB
E	CHANGED PER TDRR 17778 DR CHK APPD	7 APR 65	KB

FINAL	
NEXT ASSY	USED ON
APPLICATION	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

DO NOT [illegible] MATERIAL

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

RAYTHEON CO
LEXINGTON, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	D	8104002
SCALE NONE	WT	SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	12-64	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Logan APPD	1 MAR 65	KCO
B	CHANGED PER TDRR 16508 DR CHK Hogan APPD	11 MAR 65	KCO
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	KCO
D	CHANGED PER TDRR 16783 DR R CHK APPD	30 MAR 65	KCO
E	CHANGED PER TDRR 17778 DR CHK APPD	7 APR 65	KCO

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R NO.	E.C.R AUTH DATE	RETROFIT KIT ASSEMBLY DRAWING: SHIPPING CONTAINERS MOD NO.	SHIPPING CONTAINERS DWG NO.	INTERCONN KIT G&N TEST MOD NO.	INTERCONN KIT G&N TEST DWG NO.	INTERCONN KIT SUB SYSTEM TEST MOD NO.	INTERCONN KIT SUB SYSTEM TEST DWG NO.	ALIGN. FIXTURE ASSY NAV DSKY MOD NO.	ALIGN. FIXTURE ASSY NAV DSKY DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
3	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY									N/A	8104028						
4	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY							N/A	8104027								

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN D. DATE 11NOV64
CHECKED 18NOV64
APPROVAL 23 NOV 64
APPROVAL 11/23/64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14600		
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Loger APPD	MAR 65	
B	CHANGED PER TDRR 16504 DR CHK F. Loger APPD	3/4 65	K B
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	K B
D	CHANGED PER TDRR 16783 DR CHK APPD	30 MAR 65	KB
E	CHANGED PER TDRR 17778 DR CHK APPD	7 APR 65	KB
F	CHANGED PER TDDR 18258 DR CHK APPD	4 MAY 65	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R.		RETROFIT KIT ASSEMBLY DRAWING													
						COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT			
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.		
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004								
2	RELOCATION OF LOGIC PLATE P&M CHASSIS	3-12	0104008	R-00008		N/A	8104008												
3	SEE SHEET 2	1-8	0104018	R-00018															
4	SEE SHEET 2	1-11	0104019	R-00019															
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R-00020												N/A	8104032		
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	R-00014		N/A	8104019												
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	R-00017				N/A	8104015										
8	CHANGE COLD PLATE & MANIFOLD, ADD GRD STRAP	1-3	0104004	R-00004								N/A	8104007						
9	ADD DIGITAL OHMMETER	1-6	0104009	R-00009										N/A	8104010				
10	COMPONENT CHANGE ON PANEL A1	12&14	0104034	R-10015		N/A	8104049												
11	SYSTEM INTERFACE	14-15	0104035	R-10019		1	8104052												

NOTES:
1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN DATE 12 AUG 64
CHECKED 13 AUG 64
APPROVAL H. Moss 14 AUG 64
APPROVAL 14 Aug 64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

F 8104002

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	[illegible]	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Logan APPD [illegible]	1 MAR 65	KCO
B	CHANGED PER TDRR 16508 DR [illegible] CHK Hogan APPD D Conley	11 MAR 65	KCO
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK [illegible] APPD [illegible]	19 MAR 65	KCO
D	CHANGED PER TDRR 16783 DR R [illegible] CHK Wolkowicz APPD [illegible]	30 MAR 65	KCO
E	CHANGED PER TDRR 17778 DR Joe Alvarez CHK C DeThomas APPD D Conley	7 APR 65	KCO
F	CHANGED PER TDRR 18258 DR [illegible] CHK [illegible] APPD D Conley	4 MAY 65	[illegible] 5-4

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R		RETROFIT KIT ASSEMBLY DRAWING													
						SHIPPING CONTAINERS		INTERCONN KIT G&N TEST		INTERCONN KIT SUB SYSTEM TEST		ALIGN. FIXTURE ASSY NAV DSKY							
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.		
3	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY									N/A	8104028								
4	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY							N/A	8104027										

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN D. Wong DATE 11 NOV 64
CHECKED [illegible] 18 NOV 64
APPROVAL H W Hinsel 23 NOV 64
APPROVAL D. O'Bryant 11/23/64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL C [illegible] /64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

F 8104002

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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	[illegible]	
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK APPD	1 MAR 65	KCB
B	CHANGED PER TDRR 16504 DR CHK APPD	3/4 65	KCB
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	KCB
D	CHANGED PER TDRR 16783 DR CHK APPD	30 MAR 65	KCB
E	CHANGED PER TDRR 17778 DR CHK APPD	7 APR 65	KCB
F	CHANGED PER TDDR 18258 DR R. Smith CHK APPD	4 MAY 65	
G	CHANGED PER TDRR 19728 DR CHK R. Martin APPD	30 June 65	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.P.		RETROFIT KIT ASSEMBLY DRAWING											
						COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT	
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004						
2	RELOCATION OF LOGIC PLATE PLM CHASSIS	3-12	0104008	R-00008		N/A	8104008										
3	SEE SHEET 2	1-8	0104018	R-00018													
4	SEE SHEET 2	1-11	0104019	R-00019													
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R-00020												N/A	8104032
6	CTS KIT, BLOCK I & 100 SER. CAPABILITY	3-10	0104014	R-00014		N/A	8104019										
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	R-00017				N/A	8104015								
8	CHANGE COLD PLATE & MANIFOLD, ADD GRD STRAP	1-3	0104004	R-00004								N/A	8104007				
9	ADD DIGITAL OHMMETER	1-6	0104009	R-00009										N/A	8104010		
10	COMPONENT CHANGE ON PANEL A1	12&14	0104034	R-10015		N/A	8104049										
11	SYSTEM INTERFACE	14-15	0104035	R-10019		1	8104052										
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	R-10017								N/A	8104043				

NOTES:
1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN DATE 12 AUG 64
CHECKED 13 AUG 64
APPROVAL 14 AUG 64
APPROVAL 14 Aug 64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 2

G 8104002

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608		
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Logan APPD	1 MAR 65	KCD
B	CHANGED PER TDRR 16503 DR CHK Hogan APPD D. Conley	11 MAR 65	KCD
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	KCD
D	CHANGED PER TDRR 16783 DR R CHK Walkowiz APPD	30 MAR 65	KCD
E	CHANGED PER TDRR 17778 DR Joe Alvarez CHK C. DeMarcia APPD	7 APR 65	KCD
F	CHANGED PER TDRR 18258 DR CHK APPD	4 MAY 65	5-7
G	CHANGED PER TDRR 19728 DR CHK R. Martin APPD	30 June 65	

						RETROFIT KIT ASSEMBLY DRAWING											
ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R		SHIPPING CONTAINERS		INTERCONN KIT G&N TEST		INTERCONN KIT SUB SYSTEM TEST		ALIGN. FIXTURE ASSY NAV DSKY					
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
3	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY									N/A	8104028						
4	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY							N/A	8104027								

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FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN D. Murray DATE 11 NOV 64
CHECKED James Coleman 18 NOV 64
APPROVAL H W Wood 23 NOV 64
APPROVAL D. Hoag 11/23/64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL C Stark

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002

SCALE NONE
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SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

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RETROFIT KIT ASSEMBLY DRAWING

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.P. NO.	E.C.P. AUTH DATE	COMPUTER TEST SET MOD NO.	COMPUTER TEST SET DWG NO.	OPERATION CONSOLE MOD NO.	OPERATION CONSOLE DWG NO.	COMPUTER SIMULATOR MOD NO.	COMPUTER SIMULATOR DWG NO.	HANDLING FIXTURES MOD NO.	HANDLING FIXTURES DWG NO.	CALIBRATION SYSTEM MOD NO.	CALIBRATION SYSTEM DWG NO.	MAIN DSKY PEDESTAL MOUNT MOD NO.	MAIN DSKY PEDESTAL MOUNT DWG NO.
1	POWER FAILURE SW CIRCUITRY	3-11	0104003	R-00003						N/A	8104004						
2	RELOCATION OF LOGIC PLATE DLM CHASSIS	3-12	0104008	R-00008		N/A	8104008										
3	SEE SHEET 2	1-8	0104018	R-00018													
4	SEE SHEET 2	1-11	0104019	R-00019												N/A	8104032
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R-00020													
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	R-00014		N/A	8104019										
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	R-00017				N/A	8104015								
8	CHANGE COLD PLATE & MANIFOLD, ADD GRD STRAP	1-3	0104004	R-00004								N/A	8104007				
9	ADD DIGITAL OHMMETER	1-6	0104009	R-00009										N/A	8104010		
10	COMPONENT CHANGE ON PANEL A1	12&14	0104034	R-10015		N/A	8104049										
11	SYSTEM INTERFACE	14-15	0104035	R-10019		1	8104052										
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	R-10017								N/A	8104043				

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608		
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Gozez APPD	65	
B	CHANGED PER TDRR 16504 DR CHK F. Gozez APPD	3/11/65	KB
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	KB
D	CHANGED PER TDRR 16783 DR R CHK APPD	30 MAR 65	KB
E	CHANGED PER TDRR 17778 DR CHK APPD	7 APR 65	KB
F	CHANGED PER TDDR 18258 DR CHK APPD	4 MAY 65	
G	CHANGED PER TDRR 19728 DR CHK R. Martin APPD	30 June 65	
H	REPLACED WITH CHANGE BY REV J PER TDRR 21350 DR H. Wong CHK APPD	25 Aug 65	25 Aug 65

Ⓗ REPLACED WITH CHANGE BY REV J

NOTES:
1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN DATE 12 AUG 64
CHECKED W. Miles 13 AUG 64
APPROVAL H. Morse 14 AUG 64
APPROVAL 14 Aug 64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

H 8104002

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ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R. NO.	E.C.R. AUTH DATE	RETROFIT KIT ASSEMBLY DRAWING: SHIPPING CONTAINERS MOD NO.	SHIPPING CONTAINERS DWG NO.	INTERCONN KIT G&N TEST MOD NO.	INTERCONN KIT G&N TEST DWG NO.	INTERCONN KIT SUB SYSTEM TEST MOD NO.	INTERCONN KIT SUB SYSTEM TEST DWG NO.	ALIGN. FIXTURE ASSY NAV DSKY MOD NO.	ALIGN. FIXTURE ASSY NAV DSKY DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.
3	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY									N/A	8104028						
4	INTERCONN KIT, BLOCK I 8100 SER. CAPABILITY							N/A	8104027								

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 4608		
A	CHANGED PER TDRR 16304 DR J.P. Leonard CHK F. Logan APPD	1 MAR 65	KCD
B	CHANGED PER TDRR 16504 DR CHK Hogan APPD	11 MAR 65	KCD
C	CHANGED PER TDRR 16310 DR J.P. Leonard CHK APPD	19 MAR 65	KCD
D	CHANGED PER TDRR 16783 DR CHK Wolkowicz APPD	30 MAR 65	KCD
E	CHANGED PER TDRR 17778 DR CHK APPD	7 APR 65	KCD
F	CHANGED PER TDRR 18258 DR CHK APPD	4 MAY 65	5-4
G	CHANGED PER TDRR 19728 DR CHK APPD	30 June 65	
H	REPLACED WITH CHANGE BY REV J PER TDRR 21350 DR H. Wong CHK APPD	25 Aug 65	25 Aug 65

Ⓗ REPLACED WITH CHANGE BY REV J

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN DATE
CHECKED 18 NOV 64
APPROVAL 23 NOV 64
APPROVAL 11/23/64
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

H 8104002

8104002	J

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	9/3/65	WK

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY				
				E.C.P. NO. OR S.O.W REF	P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	R00003	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	R00008	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	R00018	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	R00019	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R00020	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	R00014	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	R00017	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	R00004	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	1-6	0104009	R00009	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	R10015	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	R10019	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	R10017	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090.		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286.	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163.		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176.		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15																					

Ⓙ REPLACES REV H WITH CHANGE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
FINAL	

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP 12775
DRAWN A.J. Marinaro DATE 8 JUL '65
CHECKED E.D. Frazing 13 JUL '65
APPROVAL Anthony Marinaro 7-14-65
APPROV. D. [illegible] 7/20/65
APPROVAL [illegible] 7/30/65
NASA APPROVAL [illegible] 8/18/65
MIT APPROVAL W [illegible] 3 Aug 65
MIT APPROVAL [illegible] 14 Jul 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 1

8104002 K

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	9/3/65	WK
K	CHANGED PER TDRR 22895 DR D. Eckenger CHK K.A. Clements APPD	10 OCT 65	15 OCT 65

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION E.C.P. No. OR S.O.W REF	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY
					P/N MODIF	RFK NO.	NEW P/N										
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	R00003	1014061	8104004	1014061-011			X							
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	R00008	1020156	8104008	1020156 MD1	X									
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	R00018	N/A	8104028	1020312									X	
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	R00019	N/A	8104027	1020313								X		
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R00020	1020195	8104032	1020343					X					
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	R00014	1014156	8104019	1020341	X									
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	R00017	1014465	8104015	1020342		X								
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	R00004	1020001	8104007	1020001-3							X			
9	ADD DIGITAL OHMMETER	1-6	0104009	R00009	1014217	8104010	1020344				X						
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	R10015	1020395	8104049	1020395 RevA	X									
11	SYSTEM INTERFACE	14&15	0104035	R10019	1020263	8104052	1020263 MD1	X									
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	R10017	1020001-2	8104043	1020001-3							X			
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X							
					1014099		1014099 MD1			X							
					1014110		1014110 MD1			X							
					1020204		1020204 MD1			X							
					1014090		1014090 MD1			X							
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X									
					1020288-1		1020288-1 MD1	X									
					1020288-2		1020288-2 MD1	X									
					1020288-3		1020288-3 MD1	X									
					1014124		1014124 MD1	X									
					1014160		1014160 MD1	X									
					1020164		1020164 MD1	X									
					1014162		1014162 MD1	X									
					1014163		1014163 MD1	X									
					1014164		1014164 MD1	X									
					1014176		1014176 MD1	X									
					1020356		1020356 MD1	X									
					1020357		1020357 MD1	X									
					1014166		1014166 MD1	X									
					1014167		1014167 MD1	X									
					1014168		1014168 MD1	X									
					1014169		1014169 MD1	X									
					1014177		1014177 MD1	X									
					1020277		1020277 MD1	X									
					1020282		1020282 MD1	X									
					1020283		1020283 MD1	X									
					1020263 MD1		1020263 MD2	X									
					1020267		1020267 MD1	X									
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X							

Ⓙ REPLACES REV H WITH CHANGE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A.J. Marinaro DATE 8 JUL '65
CHECKED D. Frazier 13 JUL '65
APPROVAL 7-14-65
APPROVAL 7/20/65
APPROVAL 7/30/65
NASA APPROVAL
MIT APPROVAL 14 Jul 65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT.
SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/65	WK
K	CHANGED PER TDRR 22895 DR D. [illegible] CHK K. [illegible] APPD [illegible]	10 OCT 65	[illegible] 15 Oct 65
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD [illegible]	11/2/65	[illegible]

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY					
					P/N MODIF	RFK NO.	NEW P/N															
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	R00003	1014061	8104004	1014061-011			X												
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	R00008	1020156	8104008	1020156 MD1	X														
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	R00018	N/A	8104028	1020312									X						
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	R00019	N/A	8104027	1020313								X							
5	REPLACE CABLE W52 WITH W211	1-9	0104020	R00020	1020195	8104032	1020343					X										
6	C.T.S. KIT, BLOCK I& 100 SER. CAPABILITY	3-16	0104014	R00014	1014156	8104019	1020341	X														
7	O.C. KIT, BLOCK I& 100 SER. CAPABILITY	1-8	0104017	R00017	1014465	8104015	1020342		X													
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	R00004	1020001	8104007	1020001-3							X								
9	ADD DIGITAL OHMMETER	1-6	0104009	R00009	1014217	8104010	1020344				X											
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	R10015	1020395	8104049	1020395 RevA	X														
11	SYSTEM INTERFACE	14&15	0104035	R10019	1020263	8104052	1020263 MD1	X														
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	R10017	1020001-2	8104043	1020001-3							X								
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X												
					1014099		1014099 MD1			X												
					1014110		1014110 MD1			X												
					1020204		1020204 MD1			X												
					1014090		1014090 MD1			X												
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X														
					1020288-1		1020288-1 MD1	X														
					1020288-2		1020288-2 MD1	X														
					1020288-3		1020288-3 MD1	X														
					1014124		1014124 MD1	X														
					1014160		1014160 MD1	X														
					1020164		1020164 MD1	X														
					1014162		1014162 MD1	X														
					1014163		1014163 MD1	X														
					1014164		1014164 MD1	X														
					1014176		1014176 MD1	X														
					1020356		1020356 MD1	X														
					1020357		1020357 MD1	X														
					1014166		1014166 MD1	X														
					1014167		1014167 MD1	X														
					1014168		1014168 MD1	X														
					1014169		1014169 MD1	X														
					1014177		1014177 MD1	X														
					1020277		1020277 MD1	X														
					1020282		1020282 MD1	X														
					1020283		1020283 MD1	X														
					1020263 MD1		1020263 MD2	X														
					1020267		1020267 MD1	X														
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X												
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X						
		1-6&9	0104052		1020321	8104093	1020428-011									X						
17	G&N FAILURE DETECT MODULE	2-11	0104037	ECP141, ECP175	1020343	8104051	1020343-011					X										
	&ANTI-VIBRATION BRKT	2-11	0104037		1020188	8104051	1020432					X										
		2-11	0104037		1020330	8104051	1020429-011					X										

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

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TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON MASS
CONTRACT NO. NAS 9-497
DRAWN A.J. Marinero DATE 8 JUL '65
CHECKED E.D. Frazier 13 JUL '65
APPROVAL Anthony [illegible] 7-14-65
APPROVAL [illegible] 7/20/65
APPROVAL [illegible] 7/30/65
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 3 Aug 65
MIT APPROVAL [illegible] 14 Jul 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 1

8104002 M

SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS			
J	REPLACES REV H WITH CHANGES PER TDRR 21350	9/3/65	WK
K	CHANGED PER TDRR 22895 DR D. [illegible] CHK K.A. [illegible] APPD [illegible]	10 OCT 65	15 Oct 65
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.O. APPD	11/12/65	bfd
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.O. APPD	2 Dec 65	bfD

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY.	RETROFIT KITS			
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-11	0104037	ECP141, ECP175	1020343	8104051	1020343-011					X									
	&ANTI-VIBRATION BRKT	2-11	0104037		1020188	8104051	1020432					X									
		2-11	0104037		1020330	8104051	1020429-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. Marinaro DATE 8 JUL '65
CHECKED E.D. Frazier 13 Jul '65
APPROVAL 7-14-65
APPROVAL 7/14/65
APPROVAL 7/19/65
NASA APPROVAL
MIT APPROVAL 14 Jul 65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO 49956
SIZE D
NASA DRAWING NO 8104002
SCALE NONE
WT
SHEET 1 OF 2

8104002 M

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TORR 24224	12/7/65	SAB

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS				
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO.19
19	DIGITAL OHMMETER	2-6	0104072	NAS 9-497	1014217	8104091	1020344-011				X											REFERENCE ITEM NO.18
					1014303-2		1020211-011				X											

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 M

Ⓝ 2004018

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	9/3/65	WK
K	CHANGED PER TDRR 22895 DR D. [illegible] CHK [illegible] APPD [illegible]	10 OCT 65	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.O. APPD	11/12/65	bfd
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.O. APPD	[illegible] 65	bfd
N	CHANGED PER TDRR 25104 DR [illegible] CHK A. [illegible]	1/14/66	[illegible]

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS			
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-11	0104037	ECP141, ECP175	1020343	8104051	1020343-011					X									
	&ANTI-VIBRATION BRKT	2-11	0104037		1020188	8104051	1020432					X									
		2-11	0104037		1020330	8104051	1020429-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. Mariano DATE 8 JUL '65
CHECKED D Frazier 13 JUL '65
APPROVAL [illegible] 7-14-65
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 14 Jul 65
MIT APPR [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO 8104002
SCALE NONE WT SHEET 1 OF 2

8104002 N

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/65	BAB
N	CHANGED PER TDRR 25104 DR R. Dumont CHK A. Kupan APPD D. Conley	1/11/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS				
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2-6	0104072	NAS 9-497	1014217	8104091	1020344-011				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									

8104002 N

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED 12 Nov 65
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Ruefer 23 Nov 65
MIT APPROVAL 11/23/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002
SCALE NONE	WT	SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 P

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	9/3/65	WK
K	CHANGED PER TDRR 22895 DR D. [illegible] CHK [illegible] APPD [illegible]	10 OCT 65	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD	11/12/65	[illegible]
M	CHANGED PER TDRR 24 224 DR W. Kelly CHK C.D. APPD	[illegible] 65	[illegible]
N	CHANGED PER TDRR 25104 DR R. [illegible] CHK A. [illegible]	1/14/66	[illegible]
P	CHANGED PER TDRR 25780 DR R. [illegible] CHK C.D. APPD	3/9/66	[illegible]

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTUE ASSY NAV. DSKY.	RETROFIT KITS		
					P/N MODIF	RFK NO.	NEW P/N													
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X										
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X												
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X				
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X					
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X								
6	CTS KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X												
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X											
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X						
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X									
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X												
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X												
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X						
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X										
					1014099		1014099 MD1			X										
					1014110		1014110 MD1			X										
					1020204		1020204 MD1			X										
					1014090		1014090 MD1			X										
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104043	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X												
					1020288-1		1020288-1 MD1	X												
					1020288-2		1020288-2 MD1	X												
					1020288-3		1020288-3 MD1	X												
					1014124		1014124 MD1	X												
					1014160		1014160 MD1	X												
					1020164		1020164 MD1	X												
					1014162		1014162 MD1	X												
					1014163		1014163 MD1	X												
					1014164		1014164 MD1	X												
					1014176		1014176 MD1	X												
					1020356		1020356 MD1	X												
					1020357		1020357 MD1	X												
					1014166		1014166 MD1	X												
					1014167		1014167 MD1	X												
					1014168		1014168 MD1	X												
					1014169		1014169 MD1	X												
					1014177		1014177 MD1	X												
					1020277		1020277 MD1	X												
					1020282		1020282 MD1	X												
					1020283		1020283 MD1	X												
					1020263 MD1		1020263 MD2	X												
					1020267		1020267 MD1	X												
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X										
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X				
		1-6&9	0104052		1020321	8104093	1020428-011									X				
17	G&N FAILURE DETECT MODULE	2-11	0104037	ECP141,ECP175	1020343	8104051	1020343-011					X								
	&ANTI-VIBRATION BRKT	2-11	0104037		1020188	8104051	1020432					X								
		2-11	0104037		1020330	8104051	1020429-011					X								

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497.
DRAWN A. J. Moreno DATE 8 JUL '65
CHECKED D. Frazing 13 JUL '65
APPROVAL [illegible] 7-14-65
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 2

8104002 P

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/65	
N	CHANGED PER TDRR 25104 DR R.E. CHK A. APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR R.E. CHK C. APPD P.C.D	2/9/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS				
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2-6	0104072	NAS 9-497	1014217	8104091	1020344-011				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-011	8104133	2014049-011				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014078		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED 12 NOV 65
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. 23 Nov 65
MIT APPROVAL 11/23/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

8104002 P

8104002 R

SYM	DESCRIPTION	DATE	APPROVED
J	REPLACES REV H WITH CHANGES PER TDRR 21350	[illegible]	WK
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	10 OCT 65	[illegible]
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.O. APPD [illegible]	11/12/65	[illegible]
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.O. APPD [illegible]	[illegible] 65	[illegible]
N	CHANGED PER TDRR 25104 DR [illegible] CHK A. [illegible]	1/14/66	[illegible]
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.O. APPD [illegible]	2/9/66	[illegible]
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	3/14/66	[illegible]

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS				
					P/N MODIF	RFK NO.	NEW P/N															
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X												
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X														
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X						
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X							
5	REPLACE CABLE W52 [illegible]	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X										
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X														
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X													
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X								
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X											
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X														
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X														
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X								
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X												
					1014099		1014099 MD1			X												
					1014110		1014110 MD1			X												
					1020204		1020204 MD1			X												
					1014090		1014090 MD1			X												
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X														
					1020288-1		1020288-1 MD1	X														
					1020288-2		1020288-2 MD1	X														
					1020288-3		1020288-3 MD1	X														
					1014124		1014124 MD1	X														
					1014160		1014160 MD1	X														
					1020164		1020164 MD1	X														
					1014162		1014162 MD1	X														
					1014163		1014163 MD1	X														
					1014164		1014164 MD1	X														
					1014176		1014176 MD1	X														
					1020356		1020356 MD1	X														
					1020357		1020357 MD1	X														
					1014166		1014166 MD1	X														
					1014167		1014167 MD1	X														
					1014168		1014168 MD1	X														
					1014169		1014169 MD1	X														
					1014177		1014177 MD1	X														
					1020277		1020277 MD1	X														
					1020282		1020282 MD1	X														
					1020283		1020283 MD1	X														
					1020263 MD1		1020263 MD2	X														
					1020267		1020267 MD1	X														
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X												
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X						
		1-6&9	0104052		1020321	8104093	1020428-011									X						
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X										
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X										
		2-8,10,11	0104037		1020330	8104051	1020436-011					X										

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. [illegible] DATE 8 JUL '65
CHECKED D. Frazier 13 JUL '65
APPROVAL [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 14 Jul 65
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE

8104002 R

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TORR 24224	12/9/65	
N	CHANGED PER TDRR 25104 DR R. CHK A. APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR R. CHK C. APPD P.C.D	3/9/66	
R	CHANGED PER TORR 26683 DR D. CHK A. APPD	3/11/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS				
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2-6	0104072	NAS 9-497	1014217	8104091	1020344-011				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-011	8104133	2014049-011				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12/10/65
CHECKED 12 Nov 65
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL 23 Nov 65
MIT APPROVAL 11/23/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 R

8104002 S

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	1/3/6	WK
K	CHANGED PER TDRR 22895 DR CHK APPD	10 OCT 65	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	1/12/65	bfl
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD	Dec 65	bfd
N	CHANGED PER TDRR 25104 DR CHK A.	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD RCD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK APPD RCD	3/23/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED, MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY.	RETROFIT KITS			
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0109043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN A.J. Mannino DATE 8 JUL '65
CHECKED D. Frazing 13 JUL '65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL W. 3 14 Jul 65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002

SCALE NONE SHEET 1 OF

8104002 S

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR R. Dumas CHK A. Kupfer APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR R. Dumas CHK C. DeAreenia APPD PCD	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD PCD	3/23/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS				
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2-6	0104072	NAS 9-497	1014217	8104091	1020344-011				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-011	8104133	2014049-011				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

8104002 S

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED 12 Nov 65
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL 23 Nov 65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

8104002 T

SYM	DESCRIPTION	DATE	APPROVED
J	REPLACES REV H WITH CHANGES PER TDRR 21350	9/3/65	WK
K	CHANGED PER TDRR 22895 DR CHK APPD	10 OCT 65	
L	CHANGED PER TDRR 23998 DR CHK C.O. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.O. APPD		
N	CHANGED PER TDRR 25104 DR CHK	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.O. APPD RCD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD RCD	3/23/66	
T	CHANGED PER TDRR 26969 DR CHK APPD RCD	4/1/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY.	RETROFIT KITS
					P/N MODIF	RFK NO.	NEW P/N											
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X								
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X										
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X		
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X			
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X						
6	C.T.S. KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X										
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X									
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X				
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X							
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X										
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X										
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X				
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X								
					1014099		1014099 MD1			X								
					1014110		1014110 MD1			X								
					1020204		1020204 MD1			X								
					1014090		1014090 MD1			X								
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X										
					1020288-1		1020288-1 MD1	X										
					1020288-2		1020288-2 MD1	X										
					1020288-3		1020288-3 MD1	X										
					1014124		1014124 MD1	X										
					1014160		1014160 MD1	X										
					1020164		1020164 MD1	X										
					1014162		1014162 MD1	X										
					1014163		1014163 MD1	X										
					1014164		1014164 MD1	X										
					1014176		1014176 MD1	X										
					1020356		1020356 MD1	X										
					1020357		1020357 MD1	X										
					1014166		1014166 MD1	X										
					1014167		1014167 MD1	X										
					1014168		1014168 MD1	X										
					1014169		1014169 MD1	X										
					1014177		1014177 MD1	X										
					1020277		1020277 MD1	X										
					1020282		1020282 MD1	X										
					1020283		1020283 MD1	X										
					1020263 MD1		1020263 MD2	X										
					1020267		1020267 MD1	X										
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X								
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X		
		1-6&9	0104052		1020321	8104093	1020428-011									X		
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X						
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X						
		2-8,10,11	0104037		1020330	8104051	1020436-011					X						

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS .XX DECIMALS .XXX ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A.J. Marinaro DATE 8 JUL '65
CHECKED D Frazier 13 JUL '65
APPROVAL 7-14-65
APPROVAL 7/13/65
APPROVAL 7/13/65
NASA APPROVAL
MIT APPROVAL 14 Jul '65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
3

8104002 T

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER. TORR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK APPD P.C.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD PCD	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK APPD PED	4/1/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS				
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2-6	0104072	NAS 9-497	1014217	8104091	1020344-011				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-011	8104133	2014049-011				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12/10/65
CHECKED
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 T

8104002 T

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	WK.

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT			
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																

Ⓣ THIS SHEET ADDED

8104002 T

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17FEB66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/2/66
NASA APPROVAL
MIT APPROVAL 3/4/66
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002

SCALE NONE WT SHEET 3 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 U

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS		
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

REVISIONS

			APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/65	WK
K	CHANGED PER TDRR 22895 DR CHK APPD	10 Oct 65	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	6fs
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD	65	6FD
N	CHANGED PER TDRR 25104 DR CHK A.	1/4/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	3/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD	3/23/66	
T	CHANGED PER TDRR 26868 DR G.J. Bisson CHK APPD	4/1/66	
U	CHANGED PER TDRR 27320 DR CHK APPD	4/11/66	

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.

CONTRACT NO. NAS 9-497

DRAWN A.J. Mariners DATE 8 JUL '65

CHECKED D. Fraging 13 JUL 65

APPROVAL 7-14-65

APPROVAL 7/13/65

APPROVAL 7/14/65

NASA APPROVAL

MIT APPROVAL 14 Jul 65

MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002

SCALE NONE SHEET 1 OF 3

8104002 U

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/65	
N	CHANGED PER TDRR 25704 DR R. D. CHK A. Kupfer APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeMarco APPD P.C.O.	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Blanger CHK J. Rzepecki APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD PCD	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Biron CHK APPD PED	4/1/66	
U	CHANGED PER TDRR 27323 DR CHK J. Rzepecki APPD PED	4/11/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOL	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS			
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104092	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2-6	0104072	NAS 9-497	1014217	8104091	1020344-011				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104065	S.O.W. 5.2.4.2	1020344-011	8104133	2014049-011				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

8104002 U

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED 12 Nov 65
APPROVAL
APPROVAL 11/12/65
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Kupfer 23Mar66
MIT APPROVAL A. Vassar 1/12/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 U

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS		
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2019002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092 0104095	ECP-75	N/A	8104169	2016313-011												X		
					N/A	8104168	2016312-011												X		

Ⓣ THIS SHEET ADDED

8104002 U

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±   DECIMALS .XXX ±   ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17JAN66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/2/66
NASA APPROVAL
MIT APPROVAL 4/4/66
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 8104002
SCALE NONE | WT | SHEET 3 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 V

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/65	WR
K	CHANGED PER TDRR 22895 DR [illegible] CHK [illegible] APPD [illegible]	10 OCT 65	
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD	65	
N	CHANGED PER TDRR 25104 DR [illegible] CHK [illegible]	1/14/66	
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD RCD	2/9/66	
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD [illegible]	3/14/66	
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD RCD	3/23/66	
T	CHANGED PER TDRR 26868 DR G.J. [illegible] CHK [illegible] APPD RCD	4/1/66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD RCD	4/11/66	
V	CHANGED PER TDRR 27491 DR [illegible] CHK C.D. APPD RCD	4/2[illegible]/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY.	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I& 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
	⋮	2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A.J. Marinaro DATE 8 JUL '65
CHECKED E.D. Frezzina 13 JUL '65
APPROVAL 7-14-65
APPROVAL 7/14/65
APPROVAL 7/14/65
NASA APPROVAL
MIT APPROVAL W. Lamb 13 July
MIT APPROVAL 14 Jul 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 3

8104002 V

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/11/66	
P	CHANGED PER TDRR 25780 DR CHK APPD P.E.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.E.D	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK APPD P.E.D	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK APPD P.E.D	4/22/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE . ITEM NO.19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO.18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104125	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497

DRAWN DATE 12/10/65

CHECKED

APPROVAL

APPROVAL

APPROVAL

NASA APPROVAL C. METZGER

MIT APPROVAL W. Kupfer 23 Nov 65

MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956

SIZE D

NASA DRAWING NO. 8104002

SCALE NONE

WT

SHEET 2 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 V

8104002	V

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	WK
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/29/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDL-ING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	

Ⓣ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 17 Feb 66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/1/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002
SCALE NONE WT SHEET 3 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 V

8104002 W

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY.	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X													
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	C.T.S. KIT, BLOCK I&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ALL DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X											
					1014099		1014099 MD1			X											
					1014110		1014110 MD1			X											
					1020204		1020204 MD1			X											
					1014090		1014090 MD1			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X													
					1020288-1		1020288-1 MD1	X													
					1020288-2		1020288-2 MD1	X													
					1020288-3		1020288-3 MD1	X													
					1014124		1014124 MD1	X													
					1014160		1014160 MD1	X													
					1020164		1020164 MD1	X													
					1014162		1014162 MD1	X													
					1014163		1014163 MD1	X													
					1014164		1014164 MD1	X													
					1014176		1014176 MD1	X													
					1020356		1020356 MD1	X													
					1020357		1020357 MD1	X													
					1014166		1014166 MD1	X													
					1014167		1014167 MD1	X													
					1014168		1014168 MD1	X													
					1014169		1014169 MD1	X													
					1014177		1014177 MD1	X													
					1020277		1020277 MD1	X													
					1020282		1020282 MD1	X													
					1020283		1020283 MD1	X													
					1020263 MD1		1020263 MD2	X													
					1020267		1020267 MD1	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
	"	2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

SYM	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/65	WK
K	CHANGED PER TDRR 22895 DR CHK APPD	10 OCT 65	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD		
N	CHANGED PER TDRR 25104 DR CHK A.	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD RCD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD RED	3/23/66	
T	CHANGED PER TDRR 26863 DR G.J. CHK APPD	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD RED	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD RED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD R.E.D	29 66	

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
CONTRACT NAS 9-497
DRAWN A.J. Manners DATE 8 JUL '65
CHECKED E.D. Frazine 13 JUL '65
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 3 Aug 65
MIT APPROVAL 14 Jul 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
SHEET 1 OF 3

8104002 W

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C. DeYreenia APPD P.C.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Belanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.C.D	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Biron CHK APPD P.E.D	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. DeYreenia APPD P.E.D	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.C.D	23 66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8109167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±   DECIMALS .XXX ±   ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12/10/65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Ruffa 23Feb66
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 W

8104002 W

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	23 May 66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	RFK NO.	NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343	8104086	2014014-011					X									
					1020343-021																
					1020194		2014002-011					X									
					1020188		2014281					X									
					1020435																
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X								
					1006229		1006422														
					2016312-011		2016316-011						X								
					1006231		1006422														

Ⓣ THIS SHEET ADDED

8104002 W

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 17FEB66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/1/66
NASA APPROVAL
MIT APPROVAL 4/6/66
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002

SYM	DESCRIPTION		
J	REPLACES REV H WITH CHANGES PER TDRR 21350	1/3/65	WK
K	CHANGED PER TDRR 22895 DR CHK APPD	10 OCT 65	
L	CHANGED PER TDRR 23990 DR CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelley CHK C.D. APPD		
N	CHANGED PER TDRR 25104 DR CHK	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK C.D. APPD	2/9/66	
R	CHANGED PER TDRR 26683 DR CHK APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR CHK APPD PED	3/23/66	
T	CHANGED PER TDRR [illegible] DR CHK APPD	4/1/66	
U	CHANGED PER TDRR [illegible] DR CHK APPD PED	4/1/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PED	27 May 66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD	6/16/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER.R			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X											
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MDI	X													
3	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X					
4	INTERCONN KIT, BLOCK 1&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X						
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X									
6	CTS KIT, BLOCK 1&100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X													
7	O.C. KIT, BLOCK 1&100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X												
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X							
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X										
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X													
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MDI	X													
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X							
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MDI			X											
					1014099		1014099 MDI			X											
					1014110		1014110 MDI			X											
					1020204		1020204 MDI			X											
					1014090		1014090 MDI			X											
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MDI	X													
					1020288-1		1020288-1 MDI	X													
					1020288-2		1020288-2 MDI	X													
					1020288-3		1020288-3 MDI	X													
					1014124		1014124 MDI	X													
					1014160		1014160 MDI	X													
					1020164		1020164 MDI	X													
					1014162		1014162 MDI	X													
					1014163		1014163 MDI	X													
					1014164		1014164 MDI	X													
					1014176		1014176 MDI	X													
					1020356		1020356 MDI	X													
					1020357		1020357 MDI	X													
					1014166		1014166 MDI	X													
					1014167		1014167 MDI	X													
					1014168		1014168 MDI	X													
					1014169		1014169 MDI	X													
					1014177		1014177 MDI	X													
					1020277		1020277 MDI	X													
					1020282		1020282 MDI	X													
					1020283		1020283 MDI	X													
					1020263 MDI		1020263 MD2	X													
					1020267		1020267 MDI	X													
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MDI	8104060	2014048-011			X											
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X					
		1-6&9	0104052		1020321	8104093	1020428-011									X					
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X									
	&ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X									
		2-8,10,11	0104037		1020330	8104051	1020436-011					X									

SUPERSEDED BY ITEM NO. 19

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	ITEM NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON LEXINGTON MASS

CONTRACT NAS 9-497

DRAWN A.J. Marino DATE 8 JUL 65

CHECKED E.D. Frazier 13 JUL 65

APPROVAL

APPROVAL

APPROVAL

NASA APPROVAL

MIT APPROVAL

MIT APPROVAL

MANNED SPACECRAFT CENTER

HOUSTON, TEXAS

MASTER RETROFIT KIT LIST

APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002

SCALE NONE

SHEET 1 OF 4

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/7/65	
N	CHANGED PER TDRR 25104 DR R. D. CHK A. Kupfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR R. D. CHK C. DeYreenia APPD P.E.D	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Blanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD P.E.D	3/23/66	
T	CHANGED PER TDRR 26863 DR A. J. Biron CHK APPD P.E.D	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C. D. APPD P.E.D	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D		
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD P.E.D	6/6/66	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104063	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 12 NOV 65
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL 23 NOV 65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104002
SCALE NONE	WT	SHEET 2 OF 4

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 Y

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
T	THIS SHEET ADDED PER TDRR 26863	3-4-66	WK.
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	23 May 66	
Y	CHANGED PER TDRR 27707 DR CHK APPD P.E.D	6/16/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER P/N MODIF	DRAWING NUMBER RFK NO.	DRAWING NUMBER NEW P/N	COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(1	1020343	8104086	2014014-011					X								
					1020343-021															
					1020194		2014002-011					X								
					1020188		2014281					X								
					1020435															
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X						
					1014336		1020433							X						
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X						
					1020147		1020434							X						
					1014376		1020437							X						
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X	
			0104095		N/A	8104168	2016312-011												X	
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X									
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X									
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011	8104161	2016316-011						X							
					1006229		1006422													
					2016312-011		2016316-011						X							
					1006231		1006422													

Ⓣ THIS SHEET ADDED

8104002 Y

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 17 Feb 66
CHECKED 18 FEB66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/1/66
NASA APPROVAL
MIT APPROVAL 4/14/66
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 3 OF 4

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 Y

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707	—	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341		2014042-021	X													
					1014142	8104132	2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014238		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A. J. Bur DATE 28MAR64
CHECKED
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 4 OF 4

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 Y

8104002 Z

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED. MOUNT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN. FIXTURE ASSY NAV. DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE
					P/N MODIF	RFK NO.	NEW P/N													
1	POWER FAILURE SWITCH CIRCUITRY	3-11	0104003	NAS 9-497	1014061	8104004	1014061-011			X										
2	RELOCATION OF LOGIC PLATE - P&M CHASSIS	3-12	0104008	ECP 51	1020156	8104008	1020156 MD1	X												
3	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-8	0104018	NAS 9-497	N/A	8104028	1020312									X				
4	INTERCONN KIT, BLOCK I&100 SER. CAPABILITY	1-11	0104019	NAS 9-497	N/A	8104027	1020313								X					
5	REPLACE CABLE W52 WITH W211	1-9	0104020	NAS 9-497	1020195	8104032	1020343					X								
6	C.T.S. KIT, BLOCK I & 100 SER. CAPABILITY	3-16	0104014	NAS 9-497	1014156	8104019	1020341	X												
7	O.C. KIT, BLOCK I & 100 SER. CAPABILITY	1-8	0104017	NAS 9-497	1014465	8104015	1020342		X											
8	CHANGE COLD PLATE & MANIFOLD-ADD GND STRAP	1-3	0104004	NAS 9-497	1020001	8104007	1020001-3							X						
9	ADD DIGITAL OHMMETER	2-6	0104009	NAS 9-497	1014217	8104010	1020344				X									
10	COMPONENT CHANGE ON PANEL A-1	12&14	0104034	IN SCOPE CHANGE	1020395	8104049	1020395 RevA	X												
11	SYSTEM INTERFACE	14&15	0104035	IN SCOPE CHANGE	1020263	8104052	1020263 MD1	X												
12	AGC HANDLING FIXTURE GROUND STRAP	7-9	0104030	IN SCOPE CHANGE	1020001-2	8104043	1020001-3							X						
13	LOGIC PLATES (C.S.) WIREWRAP GRD PINS	4-11	0104039	IN SCOPE CHANGE	1014061-011	8104054	1014061-011 MD1			X										
					1014099		1014099 MD1			X										
					1014110		1014110 MD1			X										
					1020204		1020204 MD1			X										
					1014090		1014090 MD1			X										
14	LOGIC PLATES (CTS) WIREWRAP GRD PINS	4-16	0104040	IN SCOPE CHANGE	1020286	8104055	1020286 MD1	X												
					1020288-1		1020288-1 MD1	X												
					1020288-2		1020288-2 MD1	X												
					1020288-3		1020288-3 MD1	X												
					1014124		1014124 MD1	X												
					1014160		1014160 MD1	X												
					1020164		1020164 MD1	X												
					1014162		1014162 MD1	X												
					1014163		1014163 MD1	X												
					1014164		1014164 MD1	X												
					1014176		1014176 MD1	X												
					1020356		1020356 MD1	X												
					1020357		1020357 MD1	X												
					1014166		1014166 MD1	X												
					1014167		1014167 MD1	X												
					1014168		1014168 MD1	X												
					1014169		1014169 MD1	X												
					1014177		1014177 MD1	X												
					1020277		1020277 MD1	X												
					1020282		1020282 MD1	X												
					1020283		1020283 MD1	X												
					1020263 MD1		1020263 MD2	X												
					1020267		1020267 MD1	X												
15	COMP SIMULATOR	4-15	0104043	NAS 9-497	1014061-011 MD1	8104060	2014048-011			X										
16	G&N FAILURE DETECT MODULE	1-6&9	0104052	ECP 175	1020312	8104093	1020312-011									X				
		1-6&9	0104052		1020321	8104093	1020428-011									X				
17	G&N FAILURE DETECT MODULE	2-8,10,11	0104037	ECP141, ECP175	1020343	8104051	1020343-021					X								
	& ANTI-VIBRATION BRKT	2-8,10,11	0104037		1020188	8104051	1020435					X								
		2-8,10,11	0104037		1020330	8104051	1020436-011					X								

SUPERSEDED BY ITEM NO. 19

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
J	REPLACES REV H WITH CHANGES PER TDRR 21350	4/3/65	WK
K	CHANGED PER TDRR 22895 DR D. [illegible] CHK K. [illegible] APPD	12 Oct 65	
L	CHANGED PER TDRR 23990 DR [illegible] CHK C.D. APPD	11/12/65	
M	CHANGED PER TDRR 24224 DR W. Kelly CHK C.D. APPD	Dec 65	
N	CHANGED PER TDRR 25104 DR [illegible] CHK A. [illegible]	1/14/66	
P	CHANGED PER TDRR 25780 DR [illegible] CHK C.D. APPD	2/9/66	
R	CHANGED PER TDRR 26683 DR [illegible] CHK [illegible] APPD	3/14/66	
S	CHANGED PER TDRR 26675 DR [illegible] CHK [illegible] APPD	3/23/66	
T	CHANGED PER TDRR 26868 DR [illegible] CHK [illegible] APPD	4/1/66	
U	CHANGED PER TDRR 27329 DR [illegible] CHK [illegible] APPD	4/11/66	
V	CHANGED PER TDRR 27441 DR [illegible] CHK C.D. APPD	4/29/66	
W	CHANGED PER TDRR 27706 DR [illegible] CHK [illegible] APPD	27 May 66	
Y	CHANGED PER TDRR 27707 DR [illegible] CHK C.D. APPD	7/16/66	
Z	CHANGED PER TDRR 27888 DR R. [illegible] CHK [illegible] APPD	7/21/66	

Ⓙ REPLACES REV H WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION

LIST OF MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS DECIMALS ANGLES

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.

CONTRACT NO. NAS 9-497

DRAWN A.J. Marrone DATE 8 JUL '65

CHECKED D. Frazier 13 JUL '65

APPROVAL

APPROVAL

APPROVAL

NASA APPROVAL

MIT APPROVAL

MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 SIZE D NASA DRAWING NO. 8104002

SCALE NONE

8104002 Z

SYM	DESCRIPTION	DATE	APPROVED
M	THIS SHEET ADDED PER TDRR 24224	12/9/65	
N	CHANGED PER TDRR 25104 DR CHK A. Kupfer APPD	1/14/66	
P	CHANGED PER TDRR 25780 DR CHK APPD PED	2/9/66	
R	CHANGED PER TDRR 26683 DR D. Bellanger CHK APPD	3/11/66	
S	CHANGED PER TDRR 26675 DR CHK A. Kupfer APPD PED	3/23/66	
T	CHANGED PER TDRR 26863 DR A.J. Biron CHK APPD PED	4/1/66	
U	CHANGED PER TDRR 27329 DR CHK APPD PED	4/14/66	
V	CHANGED PER TDRR 27441 DR CHK APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD PED	5/23/66	
Y	CHANGED PER TDRR 27707 DR CHK C.D. APPD PED	6/6/66	
Z	CHANGED PER TDRR 27888 DR CHK APPD	[illegible]	

ITEM NO.	DESCRIPTION	EFF NO S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KITS	SHIPPING KITS	AUX CAL CONSOLE		
					P/N MODIF	RFK NO.	NEW P/N															
18	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104042	IN SCOPE CHANGE	8104010	8104094	8104091											X				REFERENCE ITEM NO. 19
19	DIGITAL OHMMETER	2,3,5,6	0104072	NAS 9-497	1014217 1014303-2	8104091 8104167	1020344-021 1020211-021				X											REFERENCE ITEM NO. 18
					1014303-2		1020211-011				X											
20	CONTAINER, SHIPPING & STORAGE APOLLO GUIDANCE COMPUTER	1-20	0104073	NAS 9-497	1006230	8104129	1006421						X									
21	CALIBRATION CONSOLE RETROFIT KIT	2-6	0104069	S.O.W. 5.2.4.2	1020344-021	8104133	2014049-021				X											
					1014087		2016333-011				X											
					1014216		2016332-011				X											
					1014076		2016330-011				X											
					1020081		2016331-011				X											
					1014289		2014269-011				X											
					1014041		2014204-011				X											
					1006875		1006875-002				X											
					1014303-4		1014303-6				X											
					1006882-1		1006437-1				X											
					1014001-7		2014080-011				X											
					1014001-1		2014080-061				X											
					1014001-6		2014080-081				X											
22	G&N FAILURE DETECT MODULE CABLE CLEARANCE & FLEXIBILITY	9	0104083	ECP-303	1020343-011	8104110	1020343-021					X										
					1020429-011		1020436-011					X										
					1020432		1020435					X										
23	AGC HANDLING FIXTURE	1-3 7-18	0104091	ECP-304	1020001-3	8104164	1020001-4							X								

Ⓜ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 4

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 Z

8104002 Z

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
i	THIS SHEET ADDED PER TDAR 26863	3-4-66	
U	CHANGED PER TDRR 27329 DR CHK APPD P.E.D	4/11/66	
V	CHANGED PER TDRR 27441 DR CHK C.D. APPD PED	4/29/66	
W	CHANGED PER TDRR 27706 DR CHK APPD P.E.D	23 May 66	
Y	CHANGED PER TDRR 27707 DR CHK APPD P.E.D	6/16/66	
Z	CHANGED PER TDRR 27888 DR. CHK APPD	7/11/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
24	MAIN DSKY PEDESTAL MOUNT TO BLOCK II	2,3,4,5, 8,10,11	0104086	S.O.W. 5.2.4.2(i)	1020343 1020343-021	8104086	2014014-011					X									
					1020194		2014002-011					X									
					1020188 1020435		2014281					X									
25	ADDITION OF THE SHOCK INDICATOR ASSY TO DSKY HANDLING FIXTURE	1-22	0104047	ECP-75	1014334	8104171	1014334-011							X							
					1014336		1020433							X							
		1-22	0104093	ECP-75	1014377	8104172	1014377-011							X							
					1020147		1020434							X							
					1014376		1020437							X							
26	SHIPPING CONTAINERS	1-20	0104092	ECP-75	N/A	8104169	2016313-011												X		
			0104095		N/A	8104168	2016312-011												X		
27	VENTILATION OF DIGITAL OHMMETER	4	0104097	ECPR-331	1020344-011	8104167	1020344-021				X										
		7	0104097	ECPR-331	2014049-011	8104167	2014049-021				X										
		1-7	0104097	ECPR-331	2014059-011	8104167	2014059-021													X	
28	DSKY SHIPPING & STORAGE CONTAINERS TO BLOCK II	1-20	0104090	S.O.W. 5.2.4.2.	2016313-011 1006229	8104161	2016316-011 1006422						X								
					2016312-011 1006231		2016316-011 1006422						X								

Ⓣ THIS SHEET ADDED

8104002 Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 1/7/66
CHECKED 18 FEB 66
APPROVAL 3/2/66
APPROVAL 3/2/66
APPROVAL 3/?/66
NASA APPROVAL
MIT APPROVAL 4/4/66
MIT APPROVAL 3/3/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 8104002
SCALE NONE | WT | SHEET 3 OF 4

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104002 Z

SYM	DESCRIPTION	DATE	APPROVED
Y	THIS SHEET ADDED PER TDRR 27707	—	
Z	CHANGED PER TDRR 27888 DR R. CHK APPD	7/6/66	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	AUTHORIZATION	DRAWING NUMBER			COMPUTER TEST SET	OPERATION CONSOLE	COMPUTER SIMULATOR	CALIBRATION CONSOLE	MAIN DSKY PED MT	SHIPPING CONTAINERS	HANDLING FIXTURES	INTERCONN KIT G&N TEST	INTERCONN KIT SUB SYSTEM TEST	ALIGN FIXTURE ASSY NAV DSKY	RETROFIT KIT	SHIPPING KITS	AUX CAL CONSOLE	
					P/N MODIF	RFK NO.	NEW P/N														
29	COMPUTER TEST SET	4,5,6,7,8 9,11,12,14 15,16,18,19	0104087	S.O.W. 5.2.4.2	1020341		2014042-021	X													
					1014142	8104132	2014039-011	X													
					1014124		2014036-021	X													
					1020356		2014037-021	X													
					1020277		2014041-021	X													
					1014339		2014274-011	X													
					1020259		2014044-011	X													
					1014415		2016346-011	X													
					1014302-4		2014233-011	X													
					1014141		2014038-011	X													
					1014302-5		2014232-011	X													
					1014380		2014366-021	X													
					1014302-2		2014234-011	X													
					1020263		2014040-021	X													
					1006929		1006423-001	X													
					1020286		2014046-021	X													
					1014298		2014047-011	X													
					1020366		2014043-011	X													
					1014478		2014477-011	X													
					1014489		2014476-011	X													
					1014457		2014472-011	X													
					1014421-9		2014461-061	X													
					1014421-10		2014461-071	X													
					1014421-11		2014461-081	X													
					1014421-12		2014461-091	X													
					1014421-13		2014461-131	X													
30	INTERCONNECTION KIT G&N TEST	2THRU 9,11,13 14,15	0104094	S.O.W. 5.2.4.2.	1020313		2014255-021								X						
					1020307		2014254-021								X						
					1020241	8104067	2014463-011								X						
					1020242-1		2014462-011								X						
					1020242-2		2014462-021								X						
					1020244		2014462-031								X						
					1020253		2014470-011								X						
					1020311		2016334-011								X						
					1020270		2016360-011								X						

8104002 Z

Ⓨ THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

NEXT ASSY | USED ON
APPLICATION

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 Mar 66
CHECKED
APPROVAL 3/21/66
APPROVAL
APPROVAL 3/3 '66
NASA APPROVAL
MIT APPROVAL 4-7-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MASTER RETROFIT KIT LIST
APOLLO G&N GSE

CODE IDENT NO. 49956 | SIZE D | NASA DRAWING NO. 8104002
SCALE NONE | WT | SHEET 4 OF 4

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVE
—	CL A RELEASED PER TDRR 14608	12-1-64	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R		RETROFIT KIT ASSEMBLY DRAWING													
						COMPUTER TEST SET		OPERATION CONSOLE		COMPUTER SIMULATOR		HANDLING FIXTURES		CALIBRATION SYSTEM		MAIN DSKY PEDESTAL MOUNT			
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.		

NOTES:
1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
2. SEE 1014204 FOR COMPUTER TEST SET ASSY FAMILY TREE
3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE
4. SEE FOR HANDLING FIXTURE FAMILY TREE
5. SEE FOR MAIN DSKY PEDESTAL MOUNT FAMILY TREE
6. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE

—	—
SHEET 1	SHEET 2
REV STATUS OF SHEETS	

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN [illegible] DATE 12 AUG 64
CHECKED Jon W. Miles 13 AUG 64
APPROVAL H. Moss 14 AUG 64
APPROVAL D. O'Bryant 14 Aug 64
APPROVAL [illegible] 8-14-64
NASA APPROVAL [illegible] 11/64
MIT APPROVAL [illegible] 11/64
MIT APPROVAL C. Sperling 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 1 OF 2

INCHES
0 1 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 14608	12- -64	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	E.C.R		RETROFIT KIT ASSEMBLY DRAWING											
						SHIPPING CONTAINERS		INTERCONN KIT G&N TEST		INTERCONN KIT SUB SYSTEM TEST		ALIGN. FIXTURE ASSY NAV DSKY					
				NO.	AUTH DATE	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.	MOD NO.	DWG NO.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775

DRAWN D. Menge DATE 11NOV64
CHECKED [illegible] 18NOV64
APPROVAL N.W. Morse 23 NOV 64
APPROVAL D. Bryant 11/23/64
APPROVAL [illegible] 11/23/64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL C Snerdley 11/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO
RETROFIT KIT ASSEMBLIES
AGC/GSE

CODE IDENT NO. —
SIZE D
NASA DRAWING NO. 8104002
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 16780	2/24/65	WJC

1. IDENT PLATES SHALL BE MARKED AS SHOWN ON DRAWINGS 1020344 & 1020211.
2. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED.
3. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH BEST COMMERCIAL PRACTICE.
4. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023.

SEE NOTES 1 & 2 (find nos. 4 and 5)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	RIB NO. 0104009	RETROFIT INSTRUCTION BULLETIN	9
2	1001662-3	GROMMET, SERRATED STRIP	8
4	AN535-4-4	SCREW, DRIVE, B' HD	7
4	MS35200-54	SCREW, FLAT HD, CROSS REC	6
1	1020086	PLATE, IDENTIFICATION	5
1	1020085	PLATE, IDENTIFICATION	4
1	1020209	BRACKET, L.H.	3
1	1020208	BRACKET, R.H.	2
1	1006244	OHMMETER, DIGITAL	1

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

FINAL	
NEXT ASSY	USED ON
APPLICATION	

MASTER

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN W. Barnes DATE 4 AUG 64
CHECKED [illegible] 4 SEP 64
APPROVAL H. Morse 1/20/65
APPROVAL [illegible] 1/20/65
APPROVAL [illegible] 1/20/65
NASA APPROVAL [illegible] 2/24/65
MIT APPROVAL W Kupfer 24 Feb 65
MIT APPROVAL E. Sperling 2/9/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CALIBRATION SYSTEM

CODE IDENT NO. —— SIZE C NASA DRAWING NO. 8104010
SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104018 A

NOTES:

1. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1020342.
2. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED.
3. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1014388 REV C.
4. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1020051 REV B.
5. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1014416 REV E.
6. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH THE BEST COMMERCIAL PRACTICE.
7. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002025.
8. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1014404 REV B.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 16777	2/24/65	WK
A	CHANGE PER TDRR 17507 DR D. Wong CHK K.A. [illegible] APPD [illegible]	4/11/65	KCB

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
SEE NOTES 1 & 8	1	1020085	PLATE, IDENTIFICATION	22
SEE NOTES 2 & 4	1	1020085	PLATE, IDENTIFICATION	21
	6	MS35338-83	WASHER, LOCK	20
[illegible]	6	MS15795-812	WASHER, FLAT	19
[illegible]	6	MS35307-31	SCREW, HEX HEAD	18
SEE NOTES 2 & 3	1	1020086	NAMEPLATE, IDENTIFICATION	17
	3	MS35234-63	SCREW, PAN HD	16
	3	MS35338-81	WASHER, LOCK	15
	3	MS15795-808	WASHER, FLAT	14
	1	1014480-10	DECAL, IDENTIFICATION	13
	4	MS51960-63	SCREW, FLAT HD	12
	6	MS35200-44	SCREW, FLAT HD	11
	2	AN929-4C	CAP ASSEMBLIES	10
SEE NOTES 1 & 2	1	1020086	PLATE, IDENTIFICATION	9
SEE NOTES 2 & 5	1	1020085	NAMEPLATE, IDENTIFICATION	8
	4	AN535-4-3	SCREW, DRIVE, BUTTON HD	7
	1	1020361	BRACKET, CABLE HOLDER	6
	1	1020354	PLATE, R.H.	5
	1	1020353	PLATE, L.H.	4
	1	1020362	ANGLE MTG, R.H.	3
	1	1020350	ANGLE MTG, L.H.	2
	1	1020349	PANEL, BLANK	1

LIST OF MATERIALS

8104015	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN S. Spinelli DATE 16 Dec 64
CHECKED David Carlson 19 Jan 65
APPROVAL H. Moore 19 FEB 65
APPROVAL D. O'Bryant/POD 2/19/65
APPROVAL [illegible] 2-11-65
NASA APPROVAL [illegible] 3/5/65
MIT APPROVAL W Kupfer 24 Feb 65
MIT APPROVAL C [illegible] 2/14/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
OPERATION CONSOLE
ASSY, AGC/GSE

CODE IDENT NO. —
SIZE C
NASA DRAWING NO. 8104018
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104018 A

— 8104018

SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 16777	2/24/65	WK

NOTES:

1. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1020342.
2. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED.
3. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1014388 REV C.
4. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1020051 REV B.
5. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1014416 REV E.
6. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH THE BEST COMMERCIAL PRACTICE.
7. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023.
8. IDENTIFICATION PLATE SHALL BE MARKED AS SHOWN ON DRAWING 1014404 REV D.

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
SEE NOTES 1 & 8	1	1020085	PLATE, IDENTIFICATION	22
SEE NOTES 2 & 4	1	1020085	PLATE, IDENTIFICATION	21
	6	MS35338-83	WASHER, LOCK	20
SEE NOTES 2 & 5	6	MS15795-812	WASHER, FLAT	19
SEE NOTES 2 & 4	6	MS35307-31	SCREW, HEX HEAD	18
SEE NOTES 2 & 3	1	1020086	NAMEPLATE, IDENTIFICATION	17
	3	MS35234-63	SCREW, PAN HD	16
	3	MS35338-81	WASHER, LOCK	15
	3	MS15795-808	WASHER, FLAT	14
	1	1014480-10	DECAL, IDENTIFICATION	13
	4	MS35249-68	SCREW, FLAT HD	12
	6	MS35200-44	SCREW, FLAT HD	11
	2	AN929-4C	CAP ASSEMBLIES	10
SEE NOTES 1 & 2	1	1020086	PLATE, IDENTIFICATION	9
SEE NOTES 2 & 5	~~1~~	~~1020085~~	~~NAMEPLATE, IDENTIFICATION~~	~~8~~
	4	AN535-4-3	SCREW, DRIVE, BUTTON HD	7
	1	1020361	BRACKET, CABLE HOLDER	6
	1	1020354	PLATE, R.H.	5
	1	1020353	PLATE, L.H.	4
	1	1020362	ANGLE MTG, R.H.	3
	1	1020350	ANGLE MTG, L.H.	2
	1	1020349	PANEL, BLANK	1

LIST OF MATERIALS

8104015	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. FNP-12775
DRAWN E.A. Spinelli DATE 6 Dec 64
CHECKED David Cushing 19 Jan 65
APPROVAL H. Moore 9 FEB 65
APPROVAL D. O'Bryant/PDO 2/19/65
APPROVAL M.J. Brunini 2-11-65
NASA APPROVAL
MIT APPROVAL W Kupfer 24 Feb 65
MIT APPROVAL C Sperling 2/16/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT
OPERATION CONSOLE
ASSY, AGC/GSE

CODE IDENT NO. —
SIZE C
NASA DRAWING NO. 8104018
SCALE NONE
WT
SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104044 A

16387

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 17141	DER	RHE	3/24/65	

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	MS16996-10		SCREW, SOCKET HEAD, HEX	37
1	1003734		FRONT PNL MT ASSY, LEFT SIDE	36
1	1004728		SHIELD, STRAND BY SWITCH	35
8	1010630-40		SCREW, FLAT HEAD, HEX SOCKET	34
2	1010630-39		SCREW, FLAT HEAD, HEX SOCKET	33
1	1003730		SUPPORT FRONT PANEL	32
1	1003735		FRONT PANEL MOUNT ASSY, RIGHT	31
1	1004723		FRONT CLOSE-OUT PANEL	30
2	NAS620C8		WASHER, FLAT	29
22	NAS620C10		WASHER, FLAT	28
2	MS15795-808		WASHER, FLAT	27
2	1004722-2		SCREW, CAPTIVE	26
2	1006783-22		SCREW, BUTTON HEAD, HEX SOCKET	25
44	1006783-18		SCREW, BUTTON HEAD, HEX SOCKET	24
22	1006783-21		SCREW, BUTTON HEAD, HEX SOCKET	23
3	MS16995-11		SCREW, SOCKET HEAD, HEX	22
24	MS16996-13		SCREW, SOCKET HEAD, HEX	21
1	1004730		GASKET, 360 PIN CONN	20
2	1004739		BRACKET, TRAY A & B	19
2	1004734		COVER, ROPE	18
1	1004716		FRONT PLATE, LEFT SIDE, TRAY B	17
1	1003713		MIDDLE PLATE, RIGHT SIDE, TRAY B	16
1	1004714		REAR PLATE TRAY A&B	15
1	1004715		FRONT PLATE TRAY A	14
2	1004731		GASKET, 215 PIN CONN	13
1	1020338		MOUNTING KIT, AGC (100 SERIES)	12
1	1003704		FILTER MODULE	11
1	1003485		STRAND GATE MODULE B31	10
2	1003709		INTERFACE MODULE A20-A40	9
2	1003708		INTERFACE MODULE A19-A39	8
1	1004729		COVER, TRAY B	7
1	1004713		COVER, TRAY A	6
1	1003732		COVER, POTTED	5
1	1003702		CABLE ASSEMBLY	4
1	1003703		TRAY A WIRED ASSEMBLY	3
1	1003701		TRAY B WIRED ASSEMBLY	2
1	0104028		RETROFIT INSTRUCTION BULLETIN	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 4 Feb 65
CHECKED 9 Feb 65
APPROVED 9 Feb 65
APPROVED
APPROVED MIT 9 Feb 65
APPROVED MSC 2/17/65
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST
FOR R.I.B. NO. 0104028
COMPUTER ASSEMBLY

CODE IDENT NO. —
SIZE C
DRAWING NO. 8104044
SCALE NONE
SHEET 1 OF 1

4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104044

REVISIONS 16387

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	NAS620C8		WASHER, FLAT	29
22	NAS620C10		WASHER, FLAT	28
2	MS15795-808		WASHER, FLAT	27
2	1004722-2		SCREW, CAPTIVE	26
2	1006783-22		SCREW, BUTTON HEAD, HEX SOCKET	25
44	1006783-18		SCREW, BUTTON HEAD, HEX SOCKET	24

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
22	1006783-21		SCREW, BUTTON HEAD, HEX SOCKET	23
3	MS16995-11		SCREW, SOCKET HEAD, HEX	22
24	MS16996-13		SCREW, SOCKET HEAD, HEX	21
1	1004730		GASKET, 360 PIN CONN	20
2	1004739		BRACKET, TRAY A & B	19
2	1004734		COVER, ROPE	18
1	1004716		FRONT PLATE, LEFT SIDE, TRAY B	17
1	1003713		MIDDLE PLATE, RIGHT SIDE, TRAY B	16
1	1004714		REAR PLATE TRAY A&B	15
1	1004715		FRONT PLATE TRAY A	14
2	1004731		GASKET, 215 PIN CONN	13
1	1020338		MOUNTING KIT, AGC (100 SERIES)	12
1	1003704		FILTER MODULE	11
1	1003485		STRAND GATE MODULE B3i	10
2	1003709		INTERFACE MODULE A20-A40	9
2	1003708		INTERFACE MODULE A19-A39	8
1	1004729		COVER, TRAY B	7
1	1004713		COVER, TRAY A	6
1	1003732		COVER, POTTED	5
1	1003702		CABLE ASSEMBLY	4
1	1003703		TRAY A WIRED ASSEMBLY	3
1	1003701		TRAY B WIRED ASSEMBLY	2
1	0104028		RETROFIT INSTRUCTION BULLETIN	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN	D. Belanger	4 Feb 65
CHECKED	S. F. Smith	9 Feb 65
APPROVED	F. Van Benthem	9 Feb 65
APPROVED		
APPROVED MIT	W. Kupfer	9 Feb 65
APPROVED MSC		2/17/65
		DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST
FOR R.I.B. NO. 0104028
COMPUTER ASSEMBLY

CODE IDENT NO.	SIZE	DRAWING NO.
—	C	8104044

SCALE NONE SHEET 1 OF 1

4 3 2 1

– 8104051

SYM	DESCRIPTION	DATE	APPROVED
–	CL A RELEASED PER TDRR 23954		4K

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND 1002216.
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023.
3. IDENT PLATE SHALL BE MARKED AS SHOWN ON DWG 1020343-011 REV B.
4. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND 1002023.
5. BAND, MARKER, 1006415-140 MARKED PER DRAWING 1020429.

SEE NOTES 3 & 4

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
4	1010082-1	SLEEVE, SOLDER	12
4	1010730-2	CONTACT, ELECTRICAL	11
3	SEE NOTE 5	BANDMARKER	10
2	MS17821-2-0	STRAP, CABLE	9
1	8104057	RETROFIT INSTRUCTION BULLETIN	8
2	MS35650-104	NUT, PLAIN	7
2	MS35337-81	WASHER, LOCK	6
2	MS15795-808	WASHER, FLAT	5
2	MS51958-64	SCREW, PAN HD	4
1	1020631	SUPPORT, REAR	3
4	AN530-4-3	SCREW, DRIVE, BUTTON HD	2
1	1020006	PLATE, IDENTIFICATION	1

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS DECIMALS ANGLES
.XX .XXX ±
± ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO
LEXINGTON, MASS.
CONTRACT NO NAS 9-497
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
MAIN DSKY PEDESTAL MOUNT
FOR ECP 141 & 175

SIZE	CODE IDENT NO	NASA DRAWING NO
C	49956	8104051

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104060 A

SYM	DESCRIPTION	DATE	APPROVED
-	RELEASED PER TDRR 22867		
A	CHANGED PER TDRR 25329 DR G. Josephson CHK A. Kupen APPD	1/25/66	

NOTES:

1. BAND, MARKER, 1006495-132, MARKED PER DRAWING 2014114-011.
2. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014030 1006495-003 PLATE, WIREWRAPPED TO CARD DECK, 2014081, STENCILED PER DRAWING 2014030, QTY 104, STAND-OFFS, PROGRAM 1014212, QTY 104, SCREWS, PAN HD MS 51957-29, QTY 104, WASHERS, FLAT, 1006997 & QTY 104, WASHERS, LOCK MS 35338-79 ASSEMBLED TO THE PLATE PER DRAWINGS 2014030 & 1014047.
3. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014032 1006495-001 PLATE, WIREWRAPPED TO CARD DECK, 2014082, STENCILED PER DRAWING 2014032, QTY 86, STAND-OFFS, PROGRAM, 1014212, QTY 86, SCREWS, PAN HD MS 51957-29, QTY 86, WASHERS, FLAT, 1006997 & QTY 86, WASHERS, LOCK MS 35338-79 ASSEMBLED TO THE PLATE PER DRAWINGS 2014032 & 1014047.
4. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014033 1006495-001 PLATE, WIREWRAPPED TO CARD DECK 2014083, STENCILED PER DRAWING 2014033, QTY 82, STAND-OFFS, PROGRAM, 1014212, QTY 82, SCREWS, PAN HD, MS 51957-29, QTY 82, WASHERS, FLAT, 1006997 & QTY 82, WASHERS, LOCK MS 35338-79, ASSEMBLED TO THE PLATE PER DRAWINGS 2014033 & 1014047.
5. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014034 1006495-002 PLATE, WIREWRAPPED TO CARD DECK, 2014084, STENCILED PER DRAWING 2014034, QTY 26, STAND-OFFS, PROGRAM, 1014212, QTY 26, SCREWS, PAN HD, MS 51957-29, QTY 26, WASHERS, FLAT, 1006997 & QTY 26, WASHERS, LOCK MS 35338-79, ASSEMBLED TO THE PLATE PER DRAWINGS 2014034 & 1014047.
6. SERIALIZE PER ND 1002023. SERIAL NUMBER SAME AS ITEM BEING RETROFITTED.
7. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND 1002214.
8. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023.

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	4	1014476	INSULATOR	21
	3	MS21919DG12	CLAMP, CABLE	20
	4	MS15795-803	WASHER, FLAT	19
	1	RIB 0104043	RETROFIT INSTRUCTION BULLETIN	18
SEE NOTE 5	1	2014034-011	PLATE ASSY, INTERCONN. PLATE NO. 6	17
SEE NOTE 4	1	2014033-011	PLATE ASSY, LOGIC PLATE NO. 3	16
SEE NOTE 3	1	2014032-011	PLATE ASSY, LOGIC PLATE NO. 2	15
SEE NOTE 2	1	2014030-011	PLATE ASSY, LOGIC PLATE NO. 1	14
	2	MS15795-804	WASHER, FLAT	13
	9	MS24679-22	NUT, CAP, LOW-CROWN	12
	2	1006980-5	GROMMET, NYLON	11
	1	2014187-011	WIRING HARNESS	10
	1	SEE NOTE 1	BAND, MARKER	9
	8	1006919-3	LIGHT, INDICATOR	8
	8	1006407-002	LAMP, INCANDESCENT	7
SEE NOTE 6	1	1004260-202	NAME PLATE	6
	1	2014071-031	CABLE ASSY, W8	5
	1	2014071-021	CABLE ASSY, W7	4
	1	2014071-011	CABLE ASSY, W6	3
	6	1014053	MODULE, TRANSFORMER DRIVER	2
	8	1014034	MODULE, NOR	1

LIST OF MATERIALS

8104002	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. Doty DATE 14 Sept 65
CHECKED A. Kupen 20 SEP 65
APPROVAL 29 Sept 65
APPROVAL 9/20/65
APPROVAL 9/30/65
NASA APPROVAL
MIT APPROVAL 10 Oct 65
MIT APPROVAL 9/30/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER SIMULATOR
(1014061-011 MOD1 TO 2014048-011)

SIZE C
CODE IDENT NO. 49956
NASA DRAWING NO. 8104060
SCALE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02089

8104060 A

—	8104060

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	RELEASED PER TDRR 22867		

NOTES:

1. BAND, MARKER, 1006415-132, MARKED PER DRAWING 2014114-011.
2. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014030 1006495-003 PLATE, WIREWRAPPED TO CARD DECK, 2014081, STENCILED PER DRAWING 2014030, QTY 104, STAND-OFFS, PROGRAM 1014212, QTY 104, SCREWS, PAN HD MS 51957-29, QTY 104, WASHERS, FLAT, 1006997 & QTY 104, WASHERS, LOCK MS 35338-79 ASSEMBLED TO THE PLATE PER DRAWINGS 2014030 & 1014047.
3. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014032 1006495-001 PLATE, WIREWRAPPED TO CARD DECK, 2014082, STENCILED PER DRAWING 2014032, QTY 86, STAND-OFFS, PROGRAM, 1014212, QTY 86, SCREWS, PAN HD MS 51957-29, QTY 86, WASHERS, FLAT, 1006997 & QTY 86, WASHERS, LOCK MS 35338-79 ASSEMBLED TO THE PLATE PER DRAWINGS 2014032 & 1014047.
4. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014033 1006495-001 PLATE, WIREWRAPPED TO CARD DECK 2014083, STENCILED PER DRAWING 2014033, QTY 82, STAND-OFFS, PROGRAM, 1014212, QTY 82, SCREWS, PAN HD, MS 51957-29, QTY 82, WASHERS, FLAT, 1006997 & QTY 82, WASHERS, LOCK MS 35338-79, ASSEMBLED TO THE PLATE PER DRAWINGS 2014033 & 1014047.
5. THIS ITEM CONSISTS ONLY OF THE FOLLOWING PARTS OF PLATE ASSY, 2014034 1006495-002 PLATE, WIREWRAPPED TO CARD DECK, 2014084, STENCILED PER DRAWING 2014034, QTY 26, STAND-OFFS, PROGRAM, 1014212, QTY 26, SCREWS, PAN HD, MS 51957-29, QTY 26, WASHERS, FLAT, 1006997 & QTY 26, WASHERS, LOCK MS 35338-79, ASSEMBLED TO THE PLATE PER DRAWINGS 2014034 & 1014047.
6. SERIALIZE PER ND 1002023. SERIAL NUMBER SAME AS ITEM BEING RETROFITTED.
7. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND 1002214.
8. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023.

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	4	MS15795-803	WASHER, FLAT	19
	1	RIB 0104043	RETROFIT INSTRUCTION BULLETIN	18
SEE NOTE 5	1	2014034-011	PLATE ASSY, INTERCONN. PLATE NO. 6	17
SEE NOTE 4	1	2014033-011	PLATE ASSY, LOGIC PLATE NO. 3	16
SEE NOTE 3	1	2014032-011	PLATE ASSY, LOGIC PLATE NO. 2	15
SEE NOTE 2	1	2014030-011	PLATE ASSY, LOGIC PLATE NO. 1	14
	2	MS15795-804	WASHER, FLAT	13
	9	MS24679-22	NUT, CAP, LOW-CROWN	12
	2	1006980-5	GROMMET, NYLON	11
	1	2014187-011	WIRING HARNESS	10
	1	SEE NOTE 1	BAND, MARKER	9
	8	1006919-3	LIGHT, INDICATOR	8
	8	1006407-002	LAMP, INCANDESCENT	7
SEE NOTE 6	1	1004260-202	NAME PLATE	6
	1	2014071-031	CABLE ASSY, W8	5
	1	2014071-021	CABLE ASSY, W7	4
	1	2014071-011	CABLE ASSY, W6	3
	6	1014053	MODULE, TRANSFORMER DRIVER	2
	8	1014034	MODULE, NOR	1

LIST OF MATERIALS

MASTER

8104002	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. D. DATE 14 Sept 65
CHECKED A. Fisher 20SEP65
APPROVAL 29 Sept 65
APPROVAL D. O'Brien 9/20/65
APPROVAL 9/30/65
NASA APPROVAL
MIT APPROVAL 10 Oct 65
MIT APPROVAL A. Karas 9/30/65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER SIMULATOR
(1014061-011 MOD1 TO 2014048-011)

SIZE	CODE IDENT NO.	NASA DRAWING NO.
C	49956	8104060

SCALE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02089

8104061 A

SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		
A	CHANGED PER TDRR 28095 DR CHK APPD	5 May 66	

NOTES

1. PREPARATION FOR DELIVERY:
   RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214

2. IDENTIFICATION:
   EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

4. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014085 AND STENCILED PER DRAWING 2014215-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 132
   c. FLAT WASHERS, 1006997, QTY 132
   d. LOCK WASHERS, MS35338-79, QTY 132
   e. PROGRAM STAND-OFFS, 1014212, QTY 132
   f. CAPACITORS, CS13AF010K, QTY 6

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014215-011 AND 1014097

5. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014086 AND STENCILED PER DRAWING 2014216-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 118
   c. FLAT WASHERS, 1006997, QTY 118
   d. LOCK WASHERS, MS35338-79, QTY 118
   e. PROGRAM STAND-OFFS, 1014212, QTY 118
   f. CAPACITORS, CS13AF010K QTY 6

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014216-011 AND 1014097

6. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014087 AND STENCILED PER DRAWING 2014217-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 128
   c. FLAT WASHERS, 1006997, QTY 128
   d. LOCK WASHERS, MS35338-79, QTY 128
   e. PROGRAM STAND-OFFS, 1014212, QTY 128
   f. CAPACITORS, CS13AF010K, QTY 2

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014217-011 AND 1014097

7. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014088 AND STENCILED PER DRAWING 2014218-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 124
   c. FLAT WASHERS, 1006997, QTY 124
   d. LOCK WASHERS, MS35338-79, QTY 124
   e. PROGRAM STAND-OFFS, 1014212, QTY 124
   f. CAPACITORS, CS13AF010K, QTY 4

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014218-011 AND 1014097

8. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2016371 AND STENCILED PER DRAWING 2014219-021
   b. PAN HEAD SCREWS, MS51957-29, QTY 114
   c. FLAT WASHERS, 1006997, QTY 114
   d. LOCK WASHERS, MS35338-79, QTY 114
   e. PROGRAM STAND-OFFS, 1014212, QTY 114
   f. CAPACITOR, MS15825-5, QTY 1
   g. CAPACITOR, CS13AF010K, QTY 22

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014219-021 AND 1014047

9. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-002 WIREWRAPPED TO CARD DECK 2016372 AND STENCILED PER DRAWING 2014228-021
   b. PAN HD SCREWS, MS51957-29, QTY 40
   c. FLAT WASHERS, 1006997, QTY 40
   d. LOCK WASHERS, MS35338-79, QTY 40
   e. PROGRAM STAND-OFFS, 1014212, QTY 40

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014228-021 AND 1014097

10. BANDMARKER, 1006415-129 MARKED PER DRAWING 2014193-011

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	MS15795-810	WASHER, FLAT	28
1	MS35338-82	WASHER, LOCK	27
1	0104087	RETROFIT INSTRUCTION BULLETIN	26
1	MS51957-64	SCREW, PAN HEAD	25
15	MS24680-22	NUT, PLAIN, CAP	24
1	MS51957-82	SCREW, PAN HEAD	23
1	MS35649-104	NUT, HEX	22
1	MS15795-808	WASHER, FLAT	21
1	MS35338-81	WASHER, LOCK	20
~~1~~	~~MS35338-80~~	~~WASHER, LOCK~~	~~19~~
1	MS21919DG14	CLAMP, CABLE	18
2	MS35335-61	WASHER, INT LOCK	17
1	2014238-011	GROUND STRAP ASSY	16
1	1004260-260	NAMEPLATE	15
4	1006980-5	GROMMET, NYLON	14
1	SEE NOTE 10	BAND MARKER	13
2	2014236	BRACKET, PIVOT ARM	12
1	SEE NOTE 9	PLATE ASSY	11
1	SEE NOTE 8	PLATE ASSY	10
1	SEE NOTE 7	PLATE ASSY	9
1	SEE NOTE 6	PLATE ASSY	8
1	SEE NOTE 5	PLATE ASSY	7
60	2014000-011	MODULE, BUFFERED FLIP FLOP	6
5	1014230	MODULE, INTERFACE RECEIVER	5
1	1014065-3	MODULE, RESISTOR	4
1	SEE NOTE 4	PLATE ASSY	3
1	2014225-021	PANEL, FRONT	2
2	1006989-26	NUT, SELF-CLINCHING	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 25 JAN 66
CHECKED 26 JAN 66
APPROVAL
APPROVAL
APPROVAL 3/25/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
LOGIC DRAWER NO.1 ASSY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104061
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104061 A

—	8104061

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY:
RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214

2. IDENTIFICATION:
EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

4. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014085 AND STENCILED PER DRAWING 2014215-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 132
   c. FLAT WASHERS, 1006997, QTY 132
   d. LOCK WASHERS, MS35338-79, QTY 132
   e. PROGRAM STAND-OFFS, 1014212, QTY 132
   f. CAPACITORS, CS13AF010K, QTY 6

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014215-011 AND 1014047

5. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014086 AND STENCILED PER DRAWING 2014216-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 118
   c. FLAT WASHERS, 1006997, QTY 118
   d. LOCK WASHERS, MS35338-79, QTY 118
   e. PROGRAM STAND-OFFS, 1014212, QTY 118
   f. CAPACITORS, CS13AF010K QTY 6

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014216-011 AND 1014047

6. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014087 AND STENCILED PER DRAWING 2014217-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 128
   c. FLAT WASHERS, 1006997, QTY 128
   d. LOCK WASHERS, MS35338-79, QTY 128
   e. PROGRAM STAND-OFFS, 1014212, QTY 128
   f. CAPACITORS, CS13AF010K, QTY 2

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014217-011 AND 1014047

7. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014088 AND STENCILED PER DRAWING 2014218-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 124
   c. FLAT WASHERS, 1006997, QTY 124
   d. LOCK WASHERS, MS35338-79, QTY 124
   e. PROGRAM STAND-OFFS, 1014212, QTY 124
   f. CAPACITORS, CS13AF010K, QTY 4

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014218-011 AND 1014047

8. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014089 AND STENCILED PER DRAWING 2014219-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 114
   c. FLAT WASHERS, 1006997, QTY 114
   d. LOCK WASHERS, MS35338-79, QTY 114
   e. PROGRAM STAND-OFFS, 1014212, QTY 114
   f. CAPACITOR, MS15825-5, QTY 1
   g. CAPACITOR, CS13AF010K, QTY 22

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014219-011 AND 1014047

9. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS AND ITEMS
   a. PLATE 1006495-002 WIREWRAPPED TO CARD DECK 2014090 AND STENCILED PER DRAWING 2014228-011
   b. PAN HD SCREWS, MS51957-29, QTY 40
   c. FLAT WASHERS, 1006997, QTY 40
   d. LOCK WASHERS, MS35338-79, QTY 40
   e. PROGRAM STAND-OFFS, 1014212, QTY 40

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014228-011 AND 1014047

10. BANDMARKER, 1006415-129 MARKED PER DRAWING 2014193-011

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	26
1	MS51957-64	SCREW, PAN HEAD	25
15	MS24680-22	NUT, PLAIN, CAP	24
1	MS51957-62	SCREW, PAN HEAD	23
1	MS35649-104	NUT, HEX	22
2	MS15795-808	WASHER, FLAT	21
1	MS35338-81	WASHER, LOCK	20
1	MS35338-80	WASHER, LOCK	19
1	MS21333-73	CLAMP, CABLE	18
2	MS35335-61	WASHER, INT LOCK	17
1	2014238-011	GROUND STRAP ASSY	16
1	1004260-219	NAMEPLATE	15
2	1006980-5	GROMMET, NYLON	14
1	SEE NOTE 10	BANDMARKER	13
2	2014236	BRACKET, PIVOT ARM	12
1	SEE NOTE 9	PLATE ASSY	11
1	SEE NOTE 8	PLATE ASSY	10
1	SEE NOTE 7	PLATE ASSY	9
1	SEE NOTE 6	PLATE ASSY	8
1	SEE NOTE 5	PLATE ASSY	7
60	2014000-011	MODULE, BUFFERED FLIP FLOP	6
5	1014230	MODULE, INTERFACE RECEIVER	5
1	1014065-3	MODULE, RESISTOR	4
1	SEE NOTE 4	PLATE ASSY	3
1	2014225-011	PANEL, FRONT	2
2	1006989-26	NUT, SELF-CLINCHING	1

LIST OF MATERIALS

MASTER

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A.J. Bione DATE 25JAN66
CHECKED [illegible] 26 JAN66
APPROVAL [illegible] 3/8/66
APPROVAL [illegible] 3/25/66
APPROVAL K Brown 3/25/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL W. Kupfer 24 May 66
MIT APPROVAL [illegible] 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
LOGIC DRAWER NO. 1 ASSY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104061
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104062 A

SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		
A	CHANGED PER TDRR 28095 DR CHK APPD	5 May 66	(DSC)

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214

2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

4. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   - A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2016373 & STENCILED PER DRAWING 2014224-021
   - B. PAN HEAD SCREWS, MS51957-29, QTY 128
   - C. FLAT WASHERS, 1006997, QTY 128
   - D. LOCK WASHERS, MS35338-79, QTY 128
   - E. PROGRAM STAND-OFFS, 1014212, QTY 128
   - F. CAPACITORS, CS13AF010K, QTY 15

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014224-021 & 1014047

5. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   - A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014092 & STENCILED PER DRAWING 2014220-011
   - B. PAN HEAD SCREWS, MS51957-29, QTY 114
   - C. FLAT WASHERS, 1006997, QTY 114
   - D. LOCK WASHERS, MS35338-79, QTY 114
   - E. PROGRAM STAND-OFFS, 1014212, QTY 114
   - F. CAPACITOR, CS13AF010K, QTY 11

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014220-011 & 1014047

6. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   - A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014093 & STENCILED PER DRAWING 2014221-011
   - B. PAN HEAD SCREWS, MS51957-29, QTY 78
   - C. FLAT WASHERS, 1006997, QTY 78
   - D. LOCK WASHERS, MS35338-79, QTY 78
   - E. PROGRAM STAND-OFFS, 1014212, QTY 78
   - F. CAPACITOR, CS13AF010K, QTY 7

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014221-011 & 1014047

NOTES

7. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   - A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014094 & STENCILED PER DRAWING 2014222-011
   - B. PAN HEAD SCREWS, MS51957-29, QTY 60
   - C. FLAT WASHERS, 1006997, QTY 60
   - D. LOCK WASHERS, MS35338-79, QTY 60
   - E. PROGRAM STAND-OFFS, 1014212, QTY 60
   - F. CAPACITOR, CS13AF010K, QTY 1

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014222-011 & 1014047

8. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   - A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014095 & STENCILED PER DRAWING 2014223-011
   - B. PAN HEAD SCREWS, MS51957-29, QTY 126
   - C. FLAT WASHERS, 1006997, QTY 126
   - D. LOCK WASHERS, MS35338-79, QTY 126
   - E. PROGRAM STAND-OFFS, 1014212, QTY 126
   - F. CAPACITOR, CS13AF010K, QTY 7

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014223-011 & 1014047

9. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   - A. PLATE 1006495-002 WIREWRAPPED TO CARD DECK 2016374 & STENCILED PER DRAWING 2014229-021
   - B. PAN HEAD SCREWS, MS51957-29, QTY 40
   - C. FLAT WASHERS, 1006997, QTY 40
   - D. LOCK WASHERS, MS35338-79, QTY 40
   - E. PROGRAM STAND-OFFS, 1014212, QTY 40

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014229-021 & 1014047.

10. BANDMARKER, 1006415-129 MARKED PER DRAWING 2014193-011

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	MS35649-84	NUT, HEX	29
4	MS15795-807	WASHER, FLAT	28
1	0104087	RETROFIT INSTRUCTION BULLETIN	27
9	1014034	MODULE, NOR	26
1	SEE NOTE 10	BANDMARKER	25
2	1014331	PLATE, SPACING	24
1	MS21333-73	CABLE CLAMP	23
1	2014238-011	GROUND STRAP ASSY	22
2	MS35335-61	WASHER, LOCK, FLAT EXT TOOTH	21
4	MS51959-48	SCREW, PAN HEAD	20
1	MS51957-64	SCREW, PAN HEAD	19
1	MS51957-62	SCREW, PAN HEAD	18
15	MS24680-22	NUT, PLAIN, CAP	17
2	MS35338-81	WASHER, LOCK	16
3	MS15795-808	WASHER, FLAT	15
4	MS35649-104	NUT, HEX	14
1	1006239	LANYARD ASSY	13
1	1004260-261	PLATE, IDENTIFICATION	12
5	MS35338-80	WASHER, LOCK	11
4	1006980-5	GROMMET, NYLON	10
2	2014236	BRACKET, PIVET ARM	9
1	SEE NOTE 9	PLATE ASSY	8
1	SEE NOTE 8	PLATE ASSY	7
1	SEE NOTE 7	PLATE ASSY	6
1	SEE NOTE 6	PLATE ASSY	5
1	SEE NOTE 5	PLATE ASSY	4
1	SEE NOTE 4	PLATE ASSY	3
1	2014226-021	FRONT PANEL ASSY	2
2	1006989-26	NUT, SELF-CLINCHING	1

LIST OF MATERIALS

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING.

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 2
CHECKED 26 JAN 66
APPROVAL 3/22/66
APPROVAL 3/23/66
APPROVAL 3/24/66
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
LOGIC DRAWER NO. 2 ASSY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104062

SCALE NONE WT SHEET OF

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104062 A

8104062	–

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214

2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

4. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014091 & STENCILED PER DRAWING 2014224-011
   B. PAN HEAD SCREWS, MS51957-29, QTY 126
   C. FLAT WASHERS, 1006997, QTY 126
   D. LOCK WASHERS, MS35338-79, QTY 126
   E. PROGRAM STAND-OFFS, 1014212, QTY 126
   F. CAPACITORS, CS13AF010K, QTY 15
   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014224-011 & 1014047

5. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014092 & STENCILED PER DRAWING 2014220-011
   B. PAN HEAD SCREWS, MS51957-29, QTY 114
   C. FLAT WASHERS, 1006997, QTY 114
   D. LOCK WASHERS, MS35338-79, QTY 114
   E. PROGRAM STAND-OFFS, 1014212, QTY 114
   F. CAPACITOR, CS13AF010K, QTY 11
   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014220-011 & 1014047

6. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014093 & STENCILED PER DRAWING 2014221-011
   B. PAN HEAD SCREWS, MS51957-29, QTY 78
   C. FLAT WASHERS, 1006997, QTY 78
   D. LOCK WASHERS, MS35338-79, QTY 78
   E. PROGRAM STAND-OFFS, 1014212, QTY 78
   F. CAPACITOR, CS13AF010K, QTY 7
   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014221-011 & 1014047

NOTES

7. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014094 & STENCILED PER DRAWING 2014222-011
   B. PAN HEAD SCREWS, MS51957-29, QTY 60
   C. FLAT WASHERS, 1006997, QTY 60
   D. LOCK WASHERS, MS35338-79, QTY 60
   E. PROGRAM STAND-OFFS, 1014212, QTY 60
   F. CAPACITOR, CS13AF010K, QTY 1
   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014222-011 & 1014047

8. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014095 & STENCILED PER DRAWING 2014223-011
   B. PAN HEAD SCREWS, MS51957-29, QTY 126
   C. FLAT WASHERS, 1006997, QTY 126
   D. LOCK WASHERS, MS35338-79, QTY 126
   E. PROGRAM STAND-OFFS, 1014212, QTY 126
   F. CAPACITOR, CS13AF010K, QTY 7
   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014223-011 & 1014047

9. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   A. PLATE 1006495-002 WIREWRAPPED TO CARD DECK 2014096 & STENCILED PER DRAWING 2014229-011
   B. PAN HEAD SCREWS, MS51957-29, QTY 40
   C. FLAT WASHERS, 1006997, QTY 40
   D. LOCK WASHERS, MS35338-79, QTY 40
   E. PROGRAM STAND-OFFS, 1014212, QTY 40
   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014229-011 & 1014047.

10. BANDMARKER, 1006415-129 MARKED PER DRAWING 2014193-011

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	27
6	1014034	MODULE, NOR	26
1	SEE NOTE 10	BANDMARKER	25
2	1014331	PLATE, SPACING	24
1	MS21333-73	CABLE CLAMP	23
1	2014238-011	GROUND STRAP ASSY	22
2	MS35335-61	WASHER, LOCK, FLAT EXT TOOTH	21
4	MS51959-48	SCREW, PAN HEAD	20
1	MS51957-64	SCREW, PAN HEAD	19
7	MS51957-62	SCREW, PAN HEAD	18
15	MS24680-22	NUT, PLAIN, CAP	17
2	MS35338-81	WASHER, LOCK	16
3	MS15795-808	WASHER, FLAT	15
3	MS35649-104	NUT, HEX	14
1	1006239	LANYARD ASSY	13
1	1004260-220	PLATE, IDENTIFICATION	12
1	MS35338-80	WASHER, LOCK	11
2	1006980-5	GROMMET, NYLON	10
2	2014236	BRACKET, PIVET ARM	9
1	SEE NOTE 9	PLATE ASSY	8
1	SEE NOTE 8	PLATE ASSY	7
1	SEE NOTE 7	PLATE ASSY	6
1	SEE NOTE 6	PLATE ASSY	5
1	SEE NOTE 5	PLATE ASSY	4
1	SEE NOTE 4	PLATE ASSY	3
1	2014226-011	FRONT PANEL ASSY	2
2	1006989-26	NUT, SELF-CLINCHING	1

LIST OF MATERIALS

8104062	1

MASTER

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING.
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 21JAN66
CHECKED 26JAN66
APPROVAL 3/22/66
APPROVAL 3/23/66
APPROVAL 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL 3/24/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
LOGIC DRAWER NO. 2 ASSY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104062
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104063 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASE PER TDRR 25779		
A	CHANGED PER TDRR 27344 DR O.J. Bison CHK APPD P.E.D	4/4/66	

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH MD 1002214.
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER MD 1002023.
3. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER MD 1002023.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	2014057	BRACKET, SUPPORT ASSY	58
1	MX-554A/U	RESISTOR, CAP, SERIES BNC	57
3	MS15795-807	WASHER, FLAT	56
1	MS21919DG6	CLAMP, CABLE	55
1	0104069	RETROFIT INSTRUCTION BULLETIN	54
4	MS51958-62	SCREW, PAN HD	53
4	MS35337-79	WASHER, LOCK	52
4	MS51957-30	SCREW, PAN HD	51
1	1006429	GRILL, METAL	50
5	1006982-11	WASHER, NYLON	49
4	AN535-4-3	SCREW, DRIVE	48
7	MS21919DG8	CLAMP, CABLE	47
1	2014115-011	STRAP, GROUND, W234	46
1	2014080-141	CABLE ASSY, W15	45
1	2014080-131	CABLE ASSY, W14	44
1	2014080-121	CABLE ASSY, W11	43
1	2014080-111	CABLE ASSY, W10	42
1	2014080-091	CABLE ASSY, W9	41
1	2016330-011	CABLE ASSY, W12	40
1	2014080-071	CABLE ASSY, W7	39
1	2016331-011	CABLE ASSY, W13	38
1	2014080-051	CABLE ASSY, W5	37
1	2014080-041	CABLE ASSY, W4	36
1	2014080-031	CABLE ASSY, W3	35
1	2014080-021	CABLE ASSY, W2	34
2	MS21919DG11	CLAMP, CABLE	33
1	MS21919DG12	CLAMP, CABLE	32
1	MS21919DG13	CLAMP, CABLE	31
2	MS21919DG10	CLAMP, CABLE	30
2	MS21919DG5	CLAMP, CABLE	29
3	2014073	BRACKET, SUPPORT ASSY	28
30	MS51958-64	SCREW, PAN HD	27
3	2014026	BRACKET	26
3	2014074	BRACKET	25
2	2014205	ANGLE, BRACKET MOUNTING ASSY	24
2	2014214	BRACKET, ANGLE, RH	23
1	2014213	BRACKET, ANGLE, MTG, R.H.	22
1	2014212	BRACKET, ANGLE, SUPPORT, L.H.	21
5	2014011-002	INSULATING WASHER, ANTI-ROTATE	20
8	MS51958-65	SCREW, PAN HD	19
12	MS16996-9	SCREW, SOCKET HD	18
5	MS35650-104	NUT, PLAIN, HEX	17
5	MS35649-64	NUT, PLAIN, HEX	16
44	MS35338-81	WASHER, LOCK	15
1	MS35338-79	WASHER, LOCK	14
44	MS15795-808	WASHER, FLAT	13
4	MS15795-805	WASHER, FLAT	12
1	MS21919DG9	CLAMP, CABLE	11
12	MS16996-11	SCREW, SOCKET HD	10
1	1014480-10	DECAL, IDENTIFICATION	9
1	1014480-9	DECAL, IDENTIFICATION	8
1	1004260-200	NAMEPLATE	7
1	MS35173-274B	ADAPTER, CONNECTOR	6
4	MS35177-492D	ADAPTER, CONNECTOR	5
1	2014209-011	ANTENNA TUNING, CAP ASSY	4
1	1006460	AMPLIFIER, DISTRIBUTION	3
2	2014063	BRACKET, ANGLE, LH	2
2	2014060	BRACKET, MOUNTING	1

SEE NOTE 3

LIST OF MATERIALS

MASTER

8104133	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 16 DEC 65
CHECKED S.F. Smith 2 Jan 65
APPROVAL J. Frazier 1/26/66
APPROVAL D. Bryant 1/26/66
APPROVAL 1/26/66
NASA APPROVAL R. C. METZGER
MIT APPROVAL
MIT APPROVAL 1/26/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CALIBRATION CONSOLE MAIN

SIZE C
CODE IDENT NO. 49956
NASA DRAWING NO. 8104063
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02089

8104063 A

— 8104063

SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASE PER TDRR 25779		

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND 1002214.
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023.
3. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND 1002023.

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	MX-554A/U	RESISTOR, CAP, SERIES BNC	57
	3	MS15795-807	WASHER, FLAT	56
	1	MS21919DG6	CLAMP, CABLE	55
	1	0104069	RETROFIT INSTRUCTION BULLETIN	54
	4	MS51958-62	SCREW, PAN HD	53
	4	MS35337-79	WASHER, LOCK	52
	4	MS51957-30	SCREW, PAN HD	51
	1	1006429	GRILL, METAL	50
	5	1006982-11	WASHER, NYLON	49
	4	AN535-4-3	SCREW, DRIVE	48
	7	MS21919DG8	CLAMP, CABLE	47
	1	2014115-011	STRAP, GROUND, W254	46
	1	2014080-141	CABLE ASSY, W15	45
	1	2014080-131	CABLE ASSY, W14	44
	1	2014080-121	CABLE ASSY, W11	43
	1	2014080-111	CABLE ASSY, W10	42
	1	2014080-091	CABLE ASSY, W9	41
	1	2016330-011	CABLE ASSY, W12	40
	1	2014080-071	CABLE ASSY, W7	39
	1	2016331-011	CABLE ASSY, W13	38
	1	2014080-051	CABLE ASSY, W5	37
	1	2014080-041	CABLE ASSY, W4	36
	1	2014080-031	CABLE ASSY, W3	35
	1	2014080-021	CABLE ASSY, W2	34
	2	MS21919DG11	CLAMP, CABLE	33
	1	MS21919DG12	CLAMP, CABLE	32
	1	MS21919DG13	CLAMP, CABLE	31
	2	MS21919DG10	CLAMP, CABLE	30
	2	MS21919DG5	CLAMP, CABLE	29
	3	2014073	BRACKET, SUPPORT ASSY	28
	30	MS51958-64	SCREW, PAN HD	27
	3	2014026	BRACKET	26
	3	2014074	BRACKET	25
	2	2014205	ANGLE, BRACKET MOUNTING ASSY	24
	2	2014214	BRACKET, ANGLE, RH	23
	1	2014213	BRACKET, ANGLE, MTG, R.H.	22
	1	2014212	BRACKET, ANGLE, SUPPORT, L.H.	21
	5	2014011-002	INSULATING WASHER, ANTI-ROTATE	20
	8	MS51958-65	SCREW, PAN HD	19
	12	MS16996-9	SCREW, SOCKET HD	18
	5	MS35650-104	NUT, PLAIN, HEX	17
	5	MS35649-64	NUT, PLAIN, HEX	16
	44	MS35338-81	WASHER, LOCK	15
	1	MS35338-79	WASHER, LOCK	14
	44	MS15795-808	WASHER, FLAT	13
	4	MS15795-805	WASHER, FLAT	12
	1	MS21919DG9	CLAMP, CABLE	11
	12	MS16996-11	SCREW, SOCKET HD	10
	1	1014480-10	DECAL, IDENTIFICATION	9
	1	1014480-9	DECAL, IDENTIFICATION	8
SEE NOTE 3	1	1004260-200	NAMEPLATE	7
	1	MS35173-274B	ADAPTER, CONNECTOR	6
	4	MS35177-492D	ADAPTER, CONNECTOR	5
	1	2014209-011	ANTENNA TUNING, CAP ASSY	4
	1	1006460	AMPLIFIER, DISTRIBUTION	3
	2	2014063	BRACKET, ANGLE, LH	2
	2	2014060	BRACKET, MOUNTING	1

LIST OF MATERIALS

MASTER

8104133	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 16 DEC 65
CHECKED S. F. Smith 2 Dec 65
APPROVAL S. Frazier 1/26/66
APPROVAL D. Bryant 1/26/66
APPROVAL 1/26/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL 1/26/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CALIBRATION CONSOLE MAIN

SIZE C
CODE IDENT NO. 49956
NASA DRAWING NO. 8104063
SCALE NONE WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02089

8104064 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		
A	CHANGED PER TDRR 28095 DR CHK APPD	4 ... 66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214

2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3. COMPLETE DRAWER ASSEMBLY (2014041-021) SHALL BE SUPPLIED LESS MODULES ASSEMBLED TO LOGIC PLATE ASSY NO.3 (2014336-021) & LESS COMPLETE LOGIC PLATE ASSY NO.1 (2014352-021) & COMPLETE LOGIC PLATE ASSY NO.2 (2014315-021), LESS FOUR LOGIC PLATE 1 & 2 MTG BRACKETS (1014255-2) LESS QTY FOUR SUPPORT PLATES (1020231) & MTG HARDWARE & LESS QTY TWO SLIDES (1006988-2), QTY TWO SLIDES (1006988-4), QTY TWO SLIDES (1006988-1) & QTY TWO SLIDES (1006988-4)

4. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   - A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2016375 & STENCILED PER DRAWING 2014352-021
   - B. PAN HD SCREWS, MS51957-29, QTY 120
   - C. FLAT WASHERS, 1006997, QTY 120
   - D. LOCK WASHERS, MS35338-79, QTY 120
   - E. PROGRAM STAND-OFFS, 1014212, QTY 120
   - F. CAPACITORS, CS13AF010K, QTY 23

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014352-021 & 1014047

5. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS
   - A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2016376 & STENCILED PER DRAWING 2014315-021
   - B. PAN HD SCREWS, MS51957-29, QTY 104
   - C. FLAT WASHERS, 1006997, QTY 104
   - D. LOCK WASHERS, MS35338-79, QTY 104
   - E. PROGRAM STAND-OFFS, 1014212, QTY 104
   - F. CAPACITORS, CS13AF010K, QTY 8

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014315-021 & 1014047

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
16	MS51959-42	SCREW, FLAT HD	7
1	0104087	RETROFIT INSTR BULLETIN	6
1	SEE NOTE 4	PLATE ASSY	5
1	SEE NOTE 5	PLATE ASSY	4
19	2014000-011	MODULE, BUFFERED FLIP FLOP	3
17	1014034	MODULE, NOR	2
1	SEE NOTE 3	DRAWER ASSY, PROGR & MONITOR	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN DATE 8 JAN 66
CHECKED 20 JAN 66
APPROVAL 3/22/66
APPROVAL 3/23/66
APPROVAL 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
DRAWER ASSEMBLY,
PROGRAMMER AND MONITOR

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104064
SCALE
WT
SHEET 1 OF 1

8104064 A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02630

—	8104064

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214

2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3. COMPLETE DRAWER ASSEMBLY (2014041-011) SHALL BE SUPPLIED LESS MODULES ASSEMBLED TO LOGIC PLATE ASSY NO. 3 (2014336-011), & LESS COMPLETE LOGIC PLATE ASSY NO. 1 (2014352-011) & COMPLETE LOGIC PLATE ASSY NO. 2 (2014315-011)

4. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014097 & STENCILED PER DRAWING 2014352-011
   B. PAN HD SCREWS, MS51957-29, QTY 120
   C. FLAT WASHERS, 1006997, QTY 120
   D. LOCK WASHERS, MS35338-79, QTY 120
   E. PROGRAM STAND-OFFS, 1014212, QTY 120
   F. CAPACITORS, CS13AF010K, QTY 24

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014352-011 & 1014047

6. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS
   A. PLATE 1006495-001 WIREWRAPPED TO CARD DECK 2014098 & STENCILED PER DRAWING 2014315-011
   B. PAN HD SCREWS, MS51957-29, QTY 104
   C. FLAT WASHERS, 1006997, QTY 104
   D. LOCK WASHERS, MS35338-79, QTY 104
   E. PROGRAM STAND-OFFS, 1014212, QTY 104
   F. CAPACITORS, CS13AF010K, QTY 8

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014315-011 & 1014047

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTR BULLETIN	6
1	SEE NOTE 4	PLATE ASSY	5
1	SEE NOTE 5	PLATE ASSY	4
19	2014000-011	MODULE, BUFFERED FLIP FLOP	3
15	1014034	MODULE, NOR	2
1	SEE NOTE 3	DRAWER ASSY, PROGR & MONITOR	1

LIST OF MATERIALS

MASTER

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS9-497
DRAWN R. Dubois DATE 8 JAN 66
CHECKED C. Buster 20 JAN 66
APPROVAL 3/22/66
APPROVAL 3/23/66
APPROVAL K Brown 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 3/24/66
MIT APPROVAL A. Laranas 4/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
DRAWER ASSEMBLY,
PROGRAMMER AND MONITOR

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104064

SCALE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02630

8104065 A

SYM	DESCRIPTION	DATE	APPROVED
REVISIONS			
-	CLASS A RELEASED PER TDRR [illegible]	[illegible]	
A	CHANGED PER TDRR 29119 DR. CHK APPD		

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. MIL-I-631, TYPE F, FORM Ua, GRADE a, CLASS I, CATEGORY I, BLK, AWG SIZE NO. 4 FOR FIND 117, SIZE NO. 8 FOR FIND 125

CONTINUED ON SH 2

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	2014393	BRACKET, CONNECTOR	35
1	2014394	BRACKET, CONNECTOR	34
8	MS51957-28	SCREW, MACH. PAN HD	33
29	MS15795-806	WASHER, FLAT	32
15	MS35338-79	WASHER, LOCK	31
2	CP53B1EF205K1	CAPACITOR	30
1	1006882-3	FILTER, AIR	29
1	2014240	EXHAUST CHAMBER	28
4	MS51957-46	SCREW, MACH. PAN HD	27
41	MS51957-45	SCREW, MACH. PAN HD	26
43	MS35338-80	WASHER, LOCK	25
46	MS15795-807	WASHER, FLAT	24
1	2014458-161	CABLE ASSY, GROUND	23
3	2014458-151	CABLE ASSY, GROUND	22
2	2014437	BLOCK, MOUNTING	21
1	2014438	BUSBAR, W4	20
2	2014403	BLOCK, MOUNTING	19
1	2014402	BUSBAR, W3	18
1	2014329	SPACER, L.H.	17
1	2014328	SPACER RH	16
12	MS51957-81	SCREW, MACH. PAN HD	15
8	MS51957-82	SCREW, MACH. PAN HD	14
39	MS15795-810	WASHER, FLAT	13
41	MS35338-82	WASHER, LOCK	12
4	MS51958-67	SCREW, MACH. PAN HD	11
~~1~~	~~2014388~~	~~BRACKET, MOUNTING, LH~~	~~10~~
9	MS51960-64	SCREW, MACH. FLAT CSK HD	9
14	MS51959-45	SCREW, MACH. FLAT CSK HD	8
20	MS51958-62	SCREW, MACH. PAN HD	7
33	MS51958-64	SCREW, MACH. PAN HD	6
18	MS35650-104	NUT, HEX, PLAIN	5
122	MS15795-808	WASHER, FLAT	4
122	MS35338-81	WASHER, LOCK	3
1	2014435	BRACKET, ANGLE	2
1	2014436	BRACKET, ANGLE L.H.	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

NEXT ASSY	USED ON
8104136	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 20 JAN 66
CHECKED 26 JAN 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
OPERATION CONSOLE, MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104065

SCALE NONE WT SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104065 A

8104065 | A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 28019	4/14/66	
A	CHANGED PER TDRR 29119 DR. P. Battista CHK G. Kuefer APPD P.E.D		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
* .10	SEE NOTE 3	SLEEVING	125
1	MS35335-63	WASHER, LOCK, EXT TOOTH	124
1	MS51957-47	SCREW, MACH, PAN HD	123
2	1006429	GRILLE, METAL	122
1	MS35649-84	NUT, HEX	121
3	MS35337-80	WASHER, LOCK	120
1	1006476	FAN	119
1	1006410	HOSE, DUCT	118
* 1.4	SEE NOTE 3	SLEEVING	117
* 0.5	MIL-W-16878/4 E20	WIRE, ELEC, WHT	116
11	MS35690-410	NUT, HEX	115
4	AN535-4-3	SCREW, DRIVE BUTTON HD	114
1	1004260-259	NAMEPLATE	113
1	2016361	COVER, TERM. BLOCK	112
1	2014458-081	CABLE ASSY GRD	111
1	2014457-061	CABLE ASSY GRD	110
1	MS21919DG-5	CLAMP, CUSH	109
1	0104088	RETROFIT INST BULLETIN	108
1	2014388	BRACKET, MOUNTING, LH	107
1	2014391	BRACKET, MOUNTING, RH	106
6	MS15795-809	WASHER, FLAT	105
2	1015896-001	TERMINAL, FEEDTHRU, INSULATED	104
1	1006980-7	GROMMET, NYLON	103
1	1006989-25	NUT, SELF-CLINCHING	102
3	1006989-15	NUT, SELF-CLINCHING	101
1	1014480-10	DECAL, IDENTIFICATION	100
1	1014480-9	DECAL, IDENTIFICATION	99
1	1014480-8	DECAL, IDENTIFICATION	98
1	1014480-7	DECAL, IDENTIFICATION	97
1	1014480-6	DECAL, IDENTIFICATION	96
1	1014480-5	DECAL, IDENTIFICATION	95
1	1014480-4	DECAL, IDENTIFICATION	94
1	1014480-3	DECAL, IDENTIFICATION	93
1	1014480-2	DECAL, IDENTIFICATION	92
1	1014480-1	DECAL, IDENTIFICATION	91
1	2014115-041	GROUND STRAP ASSY W257	90
2	2014320	ADAPTER	89
2	MS35338-84	WASHER, LOCK	88
4	MS15795-814	WASHER, PLAIN	87
3	MS35690-610	NUT, HEX HD	86
1	2014458-131	CABLE ASSY, GROUND	85
2	2014458-121	CABLE ASSY, GROUND	84
2	MS21919DG2	CLAMP, CUSHIONED	83
1	MS21919DG10	CLAMP, CUSHIONED	82
2	2014457-021	CABLE ASSY, GROUND	81
7	MS17821-1-9	STRAP, CABLE	80
1	MS51957-79	SCREW, MACH. PAN HD	79
11	MS35690-40	NUT, PLAIN, HEX	78
10	MS51959-85	SCREW, MACH. FLAT CSK HD	77
18	MS51959-80	SCREW, MACH. FLAT CSK HD	76
8	MS51957-80	SCREW, MACH. PAN HD	75
1	2014457-081	CABLE ASSY, GROUND	74
2	2014006-011	MOUNTING FIXTURE ASSY	73
1	2014458-061	CABLE ASSY, GROUND	72
12	2014412	SPACER, SLIDE BRACKET	71

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
12	MS51958-60	SCREW, MACH. PAN HD	70
2	AN6270-4-41	HOSE ASSEMBLY	69
2	AN6270-4-13	HOSE ASSEMBLY	68
2	AN929-4	CAP ASSEMBLY	67
2	AN832-4D	UNION, BULKHEAD	66
4	1006982-10	WASHER, FLAT NYLON	65
4	AN924-4D	NUT-FLARED TUBE	64
2	AN833-4D	ELBOW-FLARED TUBE	63
1	MS21920-43	CLAMP	62
1	2014256	DUCT, AIR	61
8	MS21044C06	NUT, SELF-LOCKING	60
8	1006982-5	WASHER, NYLON	59
8	MS51957-32	SCREW, MACH. PAN HD	58
1	2014353	COVER, CAPACITOR	57
1	MS21919DG3	CLAMP, CUSHIONED	56
4	MS51957-30	SCREW, MACH. PAN HD	55
1	1006477	BLOWER	54
9	MS51958-63	SCREW, MACH. PAN HD	53
1	SE09XE02	TERMINAL, STUD MIL-T-55155/9	52
1	2014497-011	CABLE ASSY, W2	51
4	MS35337-7[illegible]	WASHER, LOCK	50
4	MS15795-803	WASHER, FLAT	49
4	MS35649-44	NUT, PLAIN, HEX HD	48
4	MS35275-218	SCREW, FIL HD	47
2	MS21919DG14	CLAMP, CUSHIONED	46
8	1006671-003	STOP NUT, CONNECTOR	45
4	1006671-002	GUIDE PIN, CONNECTOR	44
4	1006671-004	GUIDE SOCKET, CONNECTOR	43
1	2016409-011	CABLE ASSY, W1	42
2	MS21919DG28	CLAMP, CUSHIONED	41
3	MS21919DG11	CLAMP, CUSHIONED	40
1	MS21919DG13	CLAMP, CUSHIONED	39
2	MS21919DG16	CLAMP, CUSHIONED	38
1	2014498-011	WIRING HARNESS, BRANCHED A	37
68	MS51958-61	SCREW, MACH. PAN HD	36

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	2016446	BRACKET	132
1	2016325	ENG DWG CABINET REWORK	131
1	MS21919DG36	CLAMP, CUSHIONED	130
1	MS21919DG15	CLAMP, CUSHIONED	129
2	MS51957-29	SCREW, PAN HD	128
2	MS15795-805	WASHER, FLAT	127
3	MS17821-2-9	STRAP, CABLE	126

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 24 JAN 66
CHECKED 26 JAN 66
APPROVAL 13 APR 66
APPROVAL D. 4/13/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
OPERATION CONSOLE, MAIN

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104065

SCALE NONE WT SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104065 A

8104065 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR [illegible]	[illegible]	

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. MIL-I-631, TYPE F, FORM Ua, GRADE a, CLASS I, CATEGORY I, BLK, AWG SIZE NO. 4 FOR FIND 117, SIZE NO. 8 FOR FIND 125

CONTINUED ON SH 2

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	2014393	BRACKET, CONNECTOR	35
1	2014394	BRACKET, CONNECTOR	34
8	MS51957-28	SCREW, MACH. PAN HD	33
29	MS15795-806	WASHER, FLAT	32
15	MS35338-79	WASHER, LOCK	31
2	CP53B1EF205K1	CAPACITOR	30
1	1006882-3	FILTER, AIR	29
1	2014240	EXHAUST CHAMBER	28
4	MS51957-46	SCREW, MACH. PAN HD	27
41	MS51957-45	SCREW, MACH. PAN HD	26
43	MS35338-80	WASHER, LOCK	25
46	MS15795-807	WASHER, FLAT	24
1	2014458-161	CABLE ASSY, GROUND	23
3	2014458-151	CABLE ASSY, GROUND	22
2	2014437	BLOCK, MOUNTING	21
1	2014438	BUSBAR, W4	20
2	2014403	BLOCK, MOUNTING	19
1	2014402	BUSBAR, W3	18
1	2014329	SPACER, L.H.	17
1	2014328	SPACER, R.H.	16
12	MS51957-81	SCREW, MACH. PAN HD	15
8	MS51957-82	SCREW, MACH. PAN HD	14
39	MS15795-810	WASHER, FLAT	13
41	MS35338-82	WASHER, LOCK	12
4	MS51958-67	SCREW, MACH. PAN HD	11
1	2014388	BRACKET, MOUNTING, LH	10
8	MS51960-64	SCREW, MACH. FLAT CSK HD	9
14	MS51959-45	SCREW, MACH. FLAT CSK HD	8
20	MS51958-62	SCREW, MACH. PAN HD	7
31	MS51958-64	SCREW, MACH. PAN HD	6
16	MS35650-104	NUT, HEX, PLAIN	5
122	MS15795-808	WASHER, FLAT	4
120	MS35338-81	WASHER, LOCK	3
1	2014435	BRACKET, ANGLE	2
1	2014436	BRACKET, ANGLE L.H.	1

LIST OF MATERIALS

8104065 —

* DENOTES LENGTH IN FEET

MASTER

8104136	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 20 JAN 66
CHECKED J. Wolfrum 26 JAN 66
APPROVAL P. Frazier 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
OPERATION CONSOLE, MAIN

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104065
SCALE NONE
WT
SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

— 8104065

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 28069	4/16/66	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	2016325	ENG DWG CABINET REWORK	131
1	MS21919DG36	CLAMP, CUSHIONED	130
1	MS21919DG15	CLAMP, CUSHIONED	129
2	MS51957-29	SCREW, PAN HD	128
2	MS15795-805	WASHER, FLAT	127
3	MS17821-2-9	STRAP, CABLE	126

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
* .10	SEE NOTE 3	SLEEVING	125
1	MS35335-63	WASHER, LOCK, EXT TOOTH	124
1	MS51957-47	SCREW, MACH, PAN HD	123
2	1006429	GRILLE, METAL	122
1	MS35649-84	NUT, HEX	121
3	MS35337-80	WASHER, LOCK	120
1	1006476	FAN	119
1	1006410	HOSE, DUCT	118
* 1.4	SEE NOTE 3	SLEEVING	117
* 0.5	MIL-W-16878/4 E20	WIRE, ELEC, WHT	116
11	MS35690-410	NUT, HEX	115
4	AN535-4-3	SCREW, DRIVE BUTTON HD	114
1	1004260-259	NAMEPLATE	113
1	2016361	COVER, TERM. BLOCK	112
1	2014458-081	CABLE ASSY GRD	111
1	2014457-061	CABLE ASSY GRD	110
1	MS21919DG-5	CLAMP, CUSH	109
1	C104088	RETROFIT INST BULLETIN	108
1	2014388	BRACKET, MOUNTING, LH	107
1	2014391	BRACKET, MOUNTING, RH	106
4	MS15795-809	WASHER, FLAT	105
2	1015896-001	TERMINAL, FEEDTHRU, INSULATED	104
1	1006980-7	GROMMET, NYLON	103
1	1006989-25	NUT, SELF-CLINCHING	102
3	1006989-15	NUT, SELF-CLINCHING	101
1	1014480-10	DECAL, IDENTIFICATION	100
1	1014480-9	DECAL, IDENTIFICATION	99
1	1014480-8	DECAL, IDENTIFICATION	98
1	1014480-7	DECAL, IDENTIFICATION	97
1	1014480-6	DECAL, IDENTIFICATION	96
1	1014480-5	DECAL, IDENTIFICATION	95
1	1014480-4	DECAL, IDENTIFICATION	94
1	1014480-3	DECAL, IDENTIFICATION	93
1	1014480-2	DECAL, IDENTIFICATION	92
1	1014430-1	DECAL, IDENTIFICATION	91
1	2014115-041	GROUND STRAP ASSY W257	90
2	2014320	ADAPTER	89
2	MS35338-84	WASHER, LOCK	88
4	MS15795-814	WASHER, PLAIN	87
3	MS35690-610	NUT, HEX HD	86
1	2014458-131	CABLE ASSY, GROUND	85
2	2014458-121	CABLE ASSY, GROUND	84
2	MS21919DG2	CLAMP, CUSHIONED	83
1	MS21919DG10	CLAMP, CUSHIONED	82
2	2014457-021	CABLE ASSY, GROUND	81
7	MS17821-1-9	STRAP, CABLE	80
1	MS51957-79	SCREW, MACH. PAN HD	79
11	MS35690-40	NUT, PLAIN, HEX	78
10	MS51959-85	SCREW, MACH. FLAT CSK HD	77
18	MS51959-80	SCREW, MACH. FLAT CSK HD	76
8	MS51957-80	SCREW, MACH. PAN HD	75
1	201457-081	CABLE ASSY, GROUND	74
2	2014006-011	MOUNTING FIXTURE ASSY	73
1	2014458-061	CABLE ASSY, GROUND	72
12	2014412	SPACER, SLIDE BRACKET	71

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
12	MS51958-60	SCREW, MACH. PAN HD	70
2	AN6270-4-41	HOSE ASSEMBLY	69
2	AN6270-4-13	HOSE ASSEMBLY	68
2	AN929-4	CAP ASSEMBLY	67
2	AN832-4D	UNION, BULKHEAD	66
4	1006982-10	WASHER, FLAT NYLON	65
4	AN924-4D	NUT-FLARED TUBE	64
2	AN833-4D	ELBOW-FLARED TUBE	63
1	MS21920-43	CLAMP	62
1	2014256	DUCT, AIR	61
8	MS21044C06	NUT, SELF-LOCKING	60
8	1006982-5	WASHER, NYLON	59
8	MS51957-32	SCREW, MACH. PAN HD	58
1	2014353	COVER, CAPACITOR	57
1	MS21919DG3	CLAMP, CUSHIONED	56
4	MS51957-30	SCREW. MACH. PAN HD	55
1	1006477	BLOWER	54
9	MS51958-63	SCREW, MACH. PAN HD	53
1	SE09XE02	TERMINAL, STUD MIL-T-55155/9	52
1	2014497-011	CABLE ASSY, W2	51
4	MS35337-78	WASHER LOCK	50
4	MS15795-803	WASHER, FLAT	49
4	MS35649-44	NUT, PLAIN, HEX HD	48
4	MS35275-218	SCREW, FIL HD	47
2	MS21919DG14	CLAMP, CUSHIONED	46
8	1006671-003	STOP NUT, CONNECTOR	45
4	1006671-002	GUIDE PIN, CONNECTOR	44
4	1006671-004	GUIDE SOCKET, CONNECTOR	43
1	2016409-011	CABLE ASSY, W1	42
2	MS21919DG28	CLAMP, CUSHIONED	41
3	MS21919DG11	CLAMP, CUSHIONED	40
1	MS21919DG13	CLAMP, CUSHIONED	39
2	MS21919DG16	CLAMP, CUSHIONED	38
1	2014498-011	WIRING HARNESS, BRANCHED A	37
68	MS51958-61	SCREW, MACH. PAN HD	36

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 24 JAN 66
CHECKED 26 JAN 66
APPROVAL 13 APR 66
APPROVAL 4/13/66
APPROVAL 4/13/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
OPERATION CONSOLE, MAIN

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104065
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104065 —

8104067 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27887		

NOTES

1. RKA DENOTES RETROFIT KIT ASSEMBLY
2. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLIES SHALL BE PRESERVED PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
3. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

8104067 —

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	8104177	RKA CABLE ASSY W205	6
1	8104170	RKA, ADAPTER ASSY, AGC/PSA/SC	5
1	8104166	RKA, CABLE ASSY W200, 201, 202, 203	4
1	0104094	RETROFIT INSTRUCTION BULLETIN	3
1	8104165	RKA, CABLE ASSY, W207	2
1	8104068	RKA, BUFFER CIRCUIT ASSY	1

LIST OF MATERIALS

8104002	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN Tom Hillegas DATE 17FEB66
CHECKED 18FEB66
APPROVAL P. Frazier 7APR66
APPROVAL D. O. Bryant 4/7/66
APPROVAL 4/7/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
G&N CABLE KIT

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104067
SCALE NONE
WT
SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104068 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27887		
A	CHANGED PER TDRR 29114 DR CHK C. APPD	4/66	

NOTES
1. PREPARATION FOR DELIVERY: EACH RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014130-011
5. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014127-011
6. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014129-011
7. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014126-011
8. BANDMARKER 1006415-132 MARKED PER DRAWING 2014128-011
9. BANDMARKER 1006415-132 MARKED PER DRAWING 2014131-011
10. BANDMARKER 1006415-130 MARKED PER DRAWING 2014197-011
11. QQ-W-343, TYPE S, SOFT COATED (2) AWG SIZE 22
12. MIL-I-23053, CLASS 1, BLACK SIZE .125

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	MS35059-23	SWITCH, TOGGLE	40
*	0.5	1006776-172	SLEEVING	39
*	0.5	1006776-147	SLEEVING	38
*	1.0	1006776-197	SLEEVING	37
*	.05	1006776-21	SLEEVING	36
	1	0104094	RETROFIT INSTRUCTION BULLETIN	35
	4	CS13AF010K	CAPACITOR	34
*	0.3	SEE NOTE 12	SLEEVING	33
*	1.0	SEE NOTE 11	WIRE, ELECTRICAL	32
*	14.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL, BLACK	31
*	4.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL, WHITE	30
*	112	MIL-W-16878/4 E24	WIRE, ELECTRICAL, WHITE	29
	8	MS51957-28	SCREW, PAN HD	28
	8	MS15795-805	WASHER, FLAT	27
	4	MS35337-79	WASHER, LOCK	26
	4	MS35337-78	WASHER, LOCK	25
	8	MS15795-803	WASHER, FLAT	24
	8	MS51957-14	SCREW, PAN HD	23
SEE NOTE 3	1	1004260-265	PLATE, IDENT	22
	1	SEE NOTE 10	BANDMARKER	21
	1	SEE NOTE 9	BANDMARKER	20
	1	SEE NOTE 8	BANDMARKER	19
	2	SE12XC02 (MIL-T-55155/12)	TERMINAL, STANDOFF	18
	1	SEE NOTE 7	BANDMARKER	17
	1	SEE NOTE 6	BANDMARKER	16
	1	2014265-021	COMPONENT BOARD ASSY, A4	15
	1	2014263	BRACKET, COMPONENT BOARD	14
	1	2014433	BRACKET, COMPONENT BOARD	13
	1	SEE NOTE 5	BANDMARKER	12
	7	MS3193A20A	CONTACT, ELEC, SOCKET, CRIMP	11
	1	SEE NOTE 4	BANDMARKER	10
	90	1006760-44	RESISTOR	9
	12	1006760-25	RESISTOR	8
	12	1006760-1	RESISTOR	7
	12	1006752	TRANSISTOR	6
	5	SE14XC02 (MIL-T-55155/14)	TERMINAL, FEED-THRU	5
	4	MS21208C0420	HELICAL, INSERT	4
	4	1006480-005	POST, SPACER	3
	1	2014398-011	COMPONENT BOARD ASSY A5	2
	1	1006989-27	NUT, SELF-CLINCHING	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104068 A

8104067	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 18 FEB 66
CHECKED 22 FEB 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
BUFFER CIRCUIT ASSY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104068

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104068 B

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27887		
A	CHANGED PER TDRR 29114 DR A. Rudolph CHK C. DeFrancis APPD	[illegible]	
B	CHANGED PER TDRR 29371 DR A. Rudolph CHK APPD	7/1/66	

NOTES

1. PREPARATION FOR DELIVERY: EACH RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014130-011
5. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014127-011
6. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014129-011
7. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014126-011
8. BANDMARKER 1006415-132 MARKED PER DRAWING 2014128-011
9. BANDMARKER, 1006415-132 MARKED PER DRAWING 2014131-011
10. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014197-011
11. QQ-W-343, TYPE S, SOFT COATED(2) AWG SIZE 22
12. MIL-I-23053, CLASS 1, BLACK SIZE .125

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	MS51957-80	SCREW, PAN HD	43
	1	MS15795-810	WASHER, FLAT	42
	1	MS35338-82	WASHER, LOCK	41
	1	MS35059-23	SWITCH, TOGGLE	40
*	0.5	1006776-172	SLEEVING	39
*	0.5	1006776-147	SLEEVING	38
*	1.0	1006776-197	SLEEVING	37
*	.05	1006776-21	SLEEVING	36
	1	0124094	RETROFIT INSTRUCTION BULLETIN	35
	4	CS13AF010K	CAPACITOR	34
*	0.3	SEE NOTE 12	SLEEVING	33
*	1.0	SEE NOTE 11	WIRE, ELECTRICAL	32
*	14.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL, BLACK	31
*	4.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL, WHITE	30
*	112	MIL-W-16878/4 E24	WIRE, ELECTRICAL, WHITE	29
	8	MS51957-28	SCREW, PAN HD	28
	8	MS15795-805	WASHER, FLAT	27
	4	MS35337-79	WASHER, LOCK	26
	4	MS35337-78	WASHER, LOCK	25
	8	MS15795-803	WASHER, FLAT	24
	8	MS51957-14	SCREW, PAN HD	23
SEE NOTE 3	1	1004260-265	PLATE, IDENT	22
	1	SEE NOTE 10	BANDMARKER	21
	1	SEE NOTE 9	BANDMARKER	20
	1	SEE NOTE 8	BANDMARKER	19
	6	SE12XC02(MIL-T-55155/12)	TERMINAL, STANDOFF	18
	1	SEE NOTE 7	BANDMARKER	17
	1	SEE NOTE 6	BANDMARKER	16
	1	2014265-021	COMPONENT BOARD ASSY, A4	15
	1	2014263	BRACKET, COMPONENT BOARD	14
	1	2014433	BRACKET, COMPONENT BOARD	13
	1	SEE NOTE 5	BANDMARKER	12
	7	MS3193A20A	CONTACT, ELEC, SOCKET, CRIMP	11
	1	SEE NOTE 4	BANDMARKER	10
	90	1006760-44	RESISTOR	9
	12	1006760-25	RESISTOR	8
	12	1006760-1	RESISTOR	7
	12	1006752	TRANSISTOR	6
	1	SE14XC02(MIL-T-55155/14)	TERMINAL, FEED-THRU	5
	4	MS21208C0420	HELICAL, INSERT	4
	4	1006480-005	POST, SPACER	3
	1	2014398-011	COMPONENT BOARD ASSY A5	2
	1	1006989-27	NUT, SELF-CLINCHING	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104067	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 18 FEB 66
CHECKED 22 FEB 66
APPROVAL 7 APR 66
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
BUFFER CIRCUIT ASSY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104068
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104068 B

8104068 | -

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27887		

NOTES

1. PREPARATION FOR DELIVERY: EACH RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014130-011
5. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014127-011
6. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014129-011
7. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014126-011
8. BANDMARKER, 1006415-132 MARKED PER DRAWING 2014128-011
9. BANDMARKER, 1006415-132 MARKED PER DRAWING 2014131-011
10. BANDMARKER, 1006415-130 MARKED PER DRAWING 2014197-011
11. QQ-W-343, TYPE S, SOFT COATED (2) AWG SIZE 22
12. MIL-I-23053, CLASS 1, BLACK SIZE .125

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
*	0.5	1006776-172	SLEEVING	39
*	0.5	1006776-147	SLEEVING	38
*	1.0	1006776-197	SLEEVING	37
*	.05	1006776-21	SLEEVING	36
	1	0104094	RETROFIT INSTRUCTION BULLETIN	35
	4	CS13AF010K	CAPACITOR	34
*	0.3	SEE NOTE 12	SLEEVING	33
*	1.0	SEE NOTE 11	WIRE, ELECTRICAL	32
*	14.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL, BLACK	31
*	4.0	MIL-W-16878/4 E22	WIRE, ELECTRICAL, WHITE	30
*	112	MIL-W-16878/4 E24	WIRE, ELECTRICAL, WHITE	29
	8	MS51957-28	SCREW, PAN HD	28
	8	MS15795-805	WASHER, FLAT	27
	4	MS35337-79	WASHER, LOCK	26
	4	MS35337-78	WASHER, LOCK	25
	8	MS15795-803	WASHER, FLAT	24
	8	MS51957-14	SCREW, PAN HD	23
SEE NOTE 3	1	1004260-265	PLATE, IDENT	22
	1	SEE NOTE 10	BANDMARKER	21
	1	SEE NOTE 9	BANDMARKER	20
	1	SEE NOTE 8	BANDMARKER	19
	2	SE12XC02 (MIL-T-55155/12)	TERMINAL, STANDOFF	18
	1	SEE NOTE 7	BANDMARKER	17
	1	SEE NOTE 6	BANDMARKER	16
	1	2014265-021	COMPONENT BOARD ASSY, A4	15
	1	2014263	BRACKET, COMPONENT BOARD	14
	1	2014433	BRACKET, COMPONENT BOARD	13
	1	SEE NOTE 5	BANDMARKER	12
	7	MS3193A20A	CONTACT, ELEC, SOCKET, CRIMP	11
	1	SEE NOTE 4	BANDMARKER	10
	90	1006760-44	RESISTOR	9
	12	1006760-25	RESISTOR	8
	12	1006760-1	RESISTOR	7
	12	1006752	TRANSISTOR	6
	5	SE14XC02 (MIL-T-55155/14)	TERMINAL, FEED-THRU	5
	4	MS21208C0420	HELICAL, INSERT	4
	4	1006480-005	POST, SPACER	3
	1	2014398-011	COMPONENT BOARD ASSY A5	2
	1	1006989-27	NUT, SELF-CLINCHING	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104067	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN Tom A. Wilson DATE 18 FEB 66
CHECKED B. Jensen 22 FEB 66
APPROVAL P. Frazin 7 APR 66
APPROVAL D. Bryant 4/7/66
APPROVAL 4/7/66
NASA APPROVAL A. C. Mit 4/7/66
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
BUFFER CIRCUIT ASSY

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104068
SCALE NONE
WT
SHEET 1 OF 1

8104068 | -

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104070 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		
A	CHANGED PER TDRR 28095 DR CHK APPD		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-061
5. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-071
6. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-081
7. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-091
8. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-131
9. BAND MARKER, 1006415-135 MARKED PER DRAWING 2014472-011
10. BAND MARKER, 1006415-138 MARKED PER DRAWING 2014477-011
11. BAND MARKER, 1006415-097 MARKED PER DRAWING 2014477-011
12. BAND MARKER, 1006415-136 MARKED PER DRAWING 2014476-011
13. BAND MARKER, 1006415-098 MARKED PER DRAWING 2014476-011
14. WIRE ELEC MIL-W-16878/4, E14 WHITE, STRIPPED .25±.06 BOTH ENDS & TIN PER ND1002071

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	2014473-011	CABLE ASSY, W25	83
1	2014474-011	CABLE ASSY, W24	82
1	2014475-011	CABLE ASSY, W23	81
1	2014478-011	CABLE ASSY, W20	80
1	2014479-011	CABLE ASSY, W19	79
1	2014154-011	CABLE ASSY, W18	78
1	2014480-011	CABLE ASSY, W17	77
1	2014194-011	CABLE ASSY, W16	76
1	2014153-011	CABLE ASSY, W15	75
1	2014141-011	CABLE ASSY, W14	74
1	2014155-011	CABLE ASSY, W13	73
1	2014481-011	CABLE ASSY, W12	72
29	MS35338-79	WASHER, LOCK	71
29	MS15795-806	WASHER, FLAT	70
14	MS51958-62	SCREW, PAN HD	69
6	MS15795-809	WASHER, FLAT	68
10	MS51957-79	SCREW, PAN HD	67
1	MS35690-410	NUT, HEX	66
2	2014421	SUPPORT RAIL	65
2	2014420	SUPPORT RAIL	64
31	MS35338-82	WASHER, LOCK	63
31	MS15795-810	WASHER, FLAT	62
4	MS51959-17	SCREW, FLAT HD	61
1	2014182-011	WIRING HARNESS, DC DIST	60
8	MS9549-09	WASHER, FLAT	59
1	2014490-011	WIRING HARNESS, BRANCHED	58
4	2014403	BLOCK, MOUNTING	57
1	2014401	BUSS BAR	56
1	MS35690-610	NUT, HEX	55
3	MS15795-815	WASHER, FLAT	54
~~5~~	~~1006872-12~~	~~CLAMP, LOOP~~	~~53~~
2	2014422	COUPLING	52
1	1014480-21	DECAL, IDENTIFICATION	51
4	1014480-22	DECAL, IDENTIFICATION	50
4	1014480-4	DECAL, IDENTIFICATION	49
4	1014480-1	DECAL, IDENTIFICATION	48
1	1006930-14	SLIDE WITH CABLE CARRIER	47
2	1006930-17	SLIDE WITH CABLE CARRIER	46
1	2014461-121	CABLE ASSY, W253	45
1	2014461-111	CABLE ASSY, W252	44
1	2014461-051	CABLE ASSY, W247	43
1	2014461-041	CABLE ASSY, W246	42
1	2014461-031	CABLE ASSY, W245	41
1	2014461-021	CABLE ASSY, W244	40
1	2014461-011	CABLE ASSY, W243	39
1	2014432	PLATE, BAFFLE, TERM BD	38
1	1014480-18	DECAL, IDENTIFICATION	37
1	1014480-17	DECAL, IDENTIFICATION	36
4	1014480-16	DECAL, IDENTIFICATION	35
4	1014480-23	DECAL, IDENTIFICATION	34
4	1014480-14	DECAL, IDENTIFICATION	33
4	1014480-13	DECAL, IDENTIFICATION	32
4	1014480-12	DECAL, IDENTIFICATION	31

LIST OF MATERIAL

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	1014480-11	DECAL, IDENTIFICATION	30
4	1014480-10	DECAL, IDENTIFICATION	29
4	1014480-9	DECAL, IDENTIFICATION	28
1	1014480-8	DECAL, IDENTIFICATION	27
1	MS21919DG-8	CLAMP, LOOP	26
1	1004260-258	NAMEPLATE	25
4	AN535-4-3	DRIVE SCREW	24
18	MS51958-67	SCREW, PAN HD	23
9	2014425	PLATE, BAFFLE	22
8	2014424	PLATE, BAFFLE	21
1	2014458-151	CABLE ASSY, GROUND	20
94	MS51958-63	SCREW, PAN HD	19
34	MS51958-64	SCREW, PAN HD	18
1	1006938-4	SLIDE WITH CABLE CARRIER	17
27	MS35649-64	NUT, HEX	16
72	MS51958-61	SCREW, PAN HD	15
1	1006930-18	SLIDE WITH CABLE CARRIER	14
18	1006430-097	SPACER	13
3	SEE NOTE 13	BANDMARKER	12
1	SEE NOTE 12		11
3	SEE NOTE 11		10
1	SEE NOTE 10		9
3	SEE NOTE 9		8
1	SEE NOTE 8		7
1	SEE NOTE 7		6
1	SEE NOTE 6		5
1	SEE NOTE 5		4
1	SEE NOTE 4	BANDMARKER	3
1	2014115-021	STRAP, GROUND	2
5	2014458-171	CABLE ASSY, GROUND	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 25 Jan 66
CHECKED 26 Jan 66
APPROVAL 3/22/66
APPROVAL 3/22/66
APPROVAL 3/23/66
NASA APPROVAL C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER TEST SET, MAIN

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104070
SCALE NONE
WT
SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104070 A

8104070 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		
A	CHANGED PER TDRR 28095 DR CHK APPD	5 May 66	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	1014157-2	SLIDE, BRACKET ASSY	119
* 25	SEE NOTE 14	JUMPER, ELEC	118
* 20	SEE NOTE 14	JUMPER, ELEC	117
1	0104087	RETROFIT INSTRUCTION BULLETIN	116
2	2016350-041	SLIDE, BRACKET ASSY	115
2	2016350-031	SLIDE, BRACKET ASSY	114
2	2016350-021	SLIDE, BRACKET ASSY	113
2	2016350-011	SLIDE, BRACKET ASSY	112
6	MS35338-81	WASHER, LOCK	111
~~1~~	~~MS21919DG-11~~	~~CLAMP, CABLE~~	~~110~~
1	MS35649-104	NUT, HEX	109
16	1006872-14	CLAMP, LOOP	108
7	1006872-9	CLAMP, LOOP	107
11	1006872-11	CLAMP, LOOP	106
1	MS21919DG-7	CLAMP, LOOP	105
30	MS15795-807	WASHER, FLAT	104
30	MS35337-80	WASHER, LOCK	103
30	1006423-003	SCREW, REWORKED	102
1	2016326	INSTRUCTION DWG, CABINET REWORK	101
1	1006423-002	COVER ASSY	100
2	2014397	NUT, STRIP	99
1	2014395	NUT, STRIP, L.H.	98
1	2014396	NUT, STRIP, R.H.	97
1	2014458-121	CABLE ASSY, GROUND	96
1	2014458-111	CABLE ASSY, GROUND	95
1	2014458-081	CABLE ASSY, GROUND	94
1	2014458-061	CABLE ASSY, GROUND	93
1	2014457-071	CABLE ASSY, GROUND	92
1	MS21919DG13	CLAMP, CABLE	91
2	MS21919DG24	CLAMP, CABLE	90
1	MS21919DG10	CLAMP, CABLE	89
2	MS21919DG6	CLAMP, CABLE	88
5	MS21919DG14	CAMP, CABLE	87
20	MS35307-307	SCREW, CAP HEX HD	86
1	2014458-191	CABLE ASSY, GROUND	85
1	2014471-011	CABLE ASSY, W27	84

LIST OF MATERIALS

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 26 Jan 66
CHECKED 21 JAN 66
APPROVAL 2/23/66
APPROVAL 2/23/66
APPROVAL
NASA APPROVAL A. C.
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER TEST SET, MAIN

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104070
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104070 A

8104070 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-061
5. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-071
6. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-081
7. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-091
8. BAND MARKER, 1006415-126 MARKED PER DRAWING 2014461-131
9. BAND MARKER, 1006415-135 MARKED PER DRAWING 2014472-011
10. BAND MARKER, 1006415-138 MARKED PER DRAWING 2014477-011
11. BAND MARKER, 1006415-097 MARKED PER DRAWING 2014477-011
12. BAND MARKER, 1006415-134 MARKED PER DRAWING 2014476-011
13. BAND MARKER, 1006415-096 MARKED PER DRAWING 2014476-011

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	2014473-011	CABLE ASSY, W25	83
1	2014474-011	CABLE ASSY, W24	82
1	2014475-011	CABLE ASSY, W23	81
1	2014478-011	CABLE ASSY, W20	80
1	2014479-011	CABLE ASSY, W19	79
1	2014154-011	CABLE ASSY, W18	78
1	2014480-011	CABLE ASSY, W17	77
1	2014194-011	CABLE ASSY, W16	76
1	2014153-011	CABLE ASSY, W15	75
1	2014141-011	CABLE ASSY, W14	74
1	2014155-011	CABLE ASSY, W13	73
1	2014481-011	CABLE ASSY, W12	72
29	MS35338-79	WASHER, LOCK	71
29	MS15795-806	WASHER, FLAT	70
6	MS51958-62	SCREW, PAN HD	69
6	MS15795-809	WASHER, FLAT	68
9	MS51957-79	SCREW, PAN HD	67
2	MS35690-410	NUT, HEX	66
2	2014421	SUPPORT RAIL	65
2	2014420	SUPPORT RAIL	64
31	MS35338-82	WASHER, LOCK	63
31	MS15795-810	WASHER, FLAT	62
4	MS51959-17	SCREW, FLAT HD	61
1	2014182-011	WIRING HARNESS, DC DIST	60
8	MS9549-09	WASHER, FLAT	59
1	2014490-011	WIRING HARNESS, BRANCHED	58
4	2014403	BLOCK, MOUNTING	57
1	2014401	BUSS BAR	56
1	MS35690-610	NUT, HEX	55
3	MS15795-815	WASHER, FLAT	54
5	1006872-12	CLAMP, LOOP	53
2	2014422	COUPLING	52
1	1014480-21	DECAL, IDENTIFICATION	51
4	1014480-22	DECAL, IDENTIFICATION	50
4	1014480-4	DECAL, IDENTIFICATION	49
4	1014480-1	DECAL, IDENTIFICATION	48
1	1006930-14	SLIDE WITH CABLE CARRIER	47
2	1006930-17	SLIDE WITH CABLE CARRIER	46
1	2014461-121	CABLE ASSY, W253	45
1	2014461-111	CABLE ASSY. W252	44
1	2014461-051	CABLE ASSY, W247	43
1	2014461-041	CABLE ASSY, W246	42
1	2014461-031	CABLE ASSY, W245	41
1	2014461-021	CABLE ASSY, W244	40
1	2014461-011	CABLE ASSY, W243	39
1	2014432	PLATE, BAFFLE, TERM BD	38
1	1014480-18	DECAL, IDENTIFICATION	37
1	1014480-17	DECAL, IDENTIFICATION	36
4	1014480-16	DECAL, IDENTIFICATION	35
4	1014480-23	DECAL, IDENTIFICATION	34
4	1014480-14	DECAL, IDENTIFICATION	33
4	1014480-13	DECAL, IDENTIFICATION	32
4	1014480-12	DECAL, IDENTIFICATION	31

LIST OF MATERIAL

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	1014480-11	DECAL, IDENTIFICATION	30
4	1014480-10	DECAL, IDENTIFICATION	29
4	1014480-9	DECAL, IDENTIFICATION	28
1	1014480-8	DECAL, IDENTIFICATION	27
2	MS21919DG-8	CLAMP, LOOP	26
1	1004260-203	PLATE, IDENTIFICATION	25
4	AN535-4-3	DRIVE SCREW	24
18	MS51958-65	SCREW, PAN HD	23
9	2014425	PLATE, BAFFLE	22
8	2014424	PLATE, BAFFLE	21
1	2014458-151	CABLE ASSY, GROUND	20
104	MS51958-63	SCREW, PAN HD	19
34	MS51958-64	SCREW, PAN HD	18
1	1006938-4	SLIDE WITH CABLE CARRIER	17
27	MS35649-64	NUT, HEX	16
72	MS51958-61	SCREW, PAN HD	15
1	1006930-18	SLIDE WITH CABLE CARRIER	14
18	1006430-097	SPACER	13
3	SEE NOTE 13	BANDMARKER	12
1	SEE NOTE 12		11
3	SEE NOTE 11		10
1	SEE NOTE 10		9
3	SEE NOTE 9		8
1	SEE NOTE 8		7
1	SEE NOTE 7		6
1	SEE NOTE 6		5
1	SEE NOTE 5		4
1	SEE NOTE 4	BANDMARKER	3
1	2014115-021	STRAP, GROUND	2
5	2014458-171	CABLE ASSY, GROUND	1

LIST OF MATERIALS

8104132	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 25 Jan 66
CHECKED 26 JAN 66
APPROVAL 3/22/66
APPROVAL 3/22/66
APPROVAL 6/24/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER TEST SET, MAIN

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104070
SCALE NONE
WT
SHEET 1 OF 2

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104070 -

SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27962		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	116
4	2016350-041	SLIDE, BRACKET ASSY	115
2	2016350-031	SLIDE, BRACKET ASSY	114
2	2016350-021	SLIDE, BRACKET ASSY	113
4	2016350-011	SLIDE, BRACKET ASSY	112
6	MS35338-81	WASHER, LOCK	111
1	MS21919DG-11	CLAMP, CABLE	110
1	MS35649-104	NUT, HEX	109
23	1006872-14	CLAMP, LOOP	108
15	1006872-9	CLAMP, LOOP	107
8	1006872-11	CLAMP, LOOP	106
1	MS21919DG-7	CLAMP, LOOP	105
30	MS15795-807	WASHER, FLAT	104
30	MS35337-80	WASHER, LOCK	103
30	1006423-003	SCREW, REWORKED	102
1	2016326	INSTRUCTION DWG, CABINET REWORK	101
1	1006423-002	COVER ASSY	100
2	2014397	NUT, STRIP	99
1	2014395	NUT, STRIP, L.H.	98
1	2014396	NUT, STRIP, R.H.	97
1	2014458-121	CABLE ASSY, GROUND	96
1	2014458-111	CABLE ASSY, GROUND	95
1	2014458-081	CABLE ASSY, GROUND	94
1	2014458-061	CABLE ASSY, GROUND	93
1	2014457-011	CABLE ASSY, GROUND	92
3	MS21919DG64	CLAMP, CABLE	91
2	MS21919DG24	CLAMP, CABLE	90
1	MS21919DG36	CLAMP, CABLE	89
1	MS21919DG6	CLAMP, CABLE	88
3	MS21919DG14	CAMP, CABLE	87
20	MS35307-307	SCREW, CAP HEX HD	86
1	2014458-191	CABLE ASSY, GROUND	85
1	2014471-011	CABLE ASSY, W27	84

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 26 Jan 66
CHECKED 26 JAN 66
APPROVAL 3/23/66
APPROVAL 3/23/66
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL 29 Mar 66
MIT APPROVAL 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER TEST SET, MAIN

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104070
SCALE NONE
WT
SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104071 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		
A	CHANGED PER TDRR 28095 DR CHK APPD	5 May 66	(DOC)

NOTES
1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. COMPLETE XY INTERFACE ASSY (2014040-021) SHALL BE SUPPLIED LESS THE MODULES FOR LOGIC PLATE ASSY NO.1 (2014377-021) & LOGIC PLATE ASSY NO.2 (2014378-011)

8104071 A

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INST BULLETIN	8
1	2014004-011	MODULE, CLOCK	7
9	1014064	MODULE, DIODE	6
2	1014065-1	MODULE, RESISTOR 3.9K	5
8	1014065-3	MODULE, RESISTOR 510 OHM	4
2	1014053	MODULE, XFMR DRIVER	3
71	1014034	MODULE, NOR	2
1	SEE NOTE 3	XY INTERFACE ASSY	1

LIST OF MATERIALS

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 21 JAN 66
CHECKED 26 JAN 66
APPROVAL 3/23/66
APPROVAL 3/23/66
APPROVAL 3/11/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
XY INTERFACE ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104071
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104071 | —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. COMPLETE XY INTERFACE ASSY (2014040-011) SHALL BE SUPPLIED LESS THE MODULES FOR LOGIC PLATE ASSY NO.1 (2014377-011) & LOGIC PLATE ASSY NO.2 (2014378-011)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INST BULLETIN	8
1	2014004-011	MODULE, CLOCK	7
9	1014064	MODULE, DIODE	6
2	1014065-1	MODULE, RESISTOR 3.9K	5
8	1014065-3	MODULE, RESISTOR 510 OHM	4
2	1014053	MODULE, XFMR DRIVER	3
64	1014034	MODULE, NOR	2
1	SEE NOTE 3	XY INTERFACE ASSY	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 21 JAN 66
CHECKED 26 JAN 66
APPROVAL 3/23/66
APPROVAL 3/23/66
APPROVAL 3/24/66
NASA APPROVAL A. O. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
XY INTERFACE ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104071
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104072 —

SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

REVISIONS

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. COMPLETE RDC INTERFACE ASSY (2014045-011) SHALL BE SUPPLIED LESS LOGIC PLATE ASSY NO. 1 (2014376-011)
4. THIS PLATE ASSY CONSISTS OF THE FOLLOWING PARTS & ITEMS:
   a. PLATE 1006495-001 WIREWRAPED TO CARD DECK 2014102 & STENCILED PER DRAWING 2014376-011
   b. PAN HEAD SCREWS, MS51957-29, QTY 32
   c. FLAT WASHERS, 1006997, QTY 32
   d. LOCK WASHERS, MS35338-79, QTY 32
   e. PROGRAM STAND-OFFS, 1014212, QTY 32
   f. CAPACITORS, CS13AF010K, QTY 3

   ASSEMBLE THE ABOVE PARTS TO THE PLATE PER DRAWINGS 2014376-011 & 1014097

8104072 —

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	4
11	1014065-1	MODULE, RESISTOR	3
1	SEE NOTE 4	PLATE ASSY	2
1	SEE NOTE 3	RDC INTERFACE ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN D. Bolger DATE 24 Jan 66
CHECKED 26 JAN 66
APPROVAL 3/23/66
APPROVAL D Parker 3/23/66
APPROVAL K Bow 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 25 Mar 66
MIT APPROVAL A. Harano 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
RDC INTERFACE ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104072
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

— 8104073

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INST BULLETIN	2
1	2014044	POWER CONTROL ASSY	1

LIST OF MATERIALS

MASTER

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN DATE 24 JAN 66
CHECKED 26 JAN 66
APPROVAL 3/23/66
APPROVAL 3/23/66
APPROVAL 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 29/6/66
MIT APPROVAL A. Harano 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
POWER CONTROL ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104073

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

— 8104074

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. BANDMARKER, 1006415-132 MARKED PER DRAWING 2014135-011

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INST BULLETIN	10
8	MS51957-17	SCREW, PAN HD	9
2	SEE NOTE 4	BANDMARKER	8
1	2014140-011	CABLE ASSY, W2	7
1	1004260-244	PLATE, IDENT	6
9	MS15795-807	WASHER, FLAT	5
8	MS35649-44	NUT, PLAIN	4
8	MS35337-78	WASHER, LOCK	3
16	MS15795-804	WASHER, FLAT	2
1	2014374	COVER ASSY	1

LIST OF MATERIALS

8104074 —

MASTER

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN Tom Allison DATE 25 JAN 66
CHECKED 26 JAN 66
APPROVAL 3/22/66
APPROVAL 3/23/66
APPROVAL 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 29 Mar 66
MIT APPROVAL 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
TAPE READER ASSY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104074

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 60530

8104075 –

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		

NOTES
1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. BANDMARKER, 1006415-132 MARKED PER DRAWING 2014139-011

SEE NOTE 3

8104075 –

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INST BULLETIN	10
2	SEE NOTE 4	BANDMARKER	9
1	2014140-011	CABLE ASSY, W2	8
1	1004260-245	PLATE, IDENT	7
9	MS15795-807	WASHER, FLAT	6
8	MS35649-44	NUT, HEX	5
16	MS15795-804	WASHER, FLAT	4
8	MS35337-78	WASHER, LOCK	3
8	MS51957-17	SCREW, MACH. PAN HD	2
1	2014431	COVER, ASSEMBLY	1

LIST OF MATERIALS

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 25JAN66
CHECKED 26JAN66
APPROVAL
APPROVAL 3/23/66
APPROVAL 4/4/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL 7/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
TAPE PUNCH ASSY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104075
SCALE NONE	WT	SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104076 | —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	2
1	1004260-233	PLATE, IDENT	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN D. Bel DATE 25 Jan 66
CHECKED 26 JAN 66
APPROVAL 3/23/66
APPROVAL 3/23/66
APPROVAL 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 29 Mar 66
MIT APPROVAL A. Varano 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
AUX. OUTLET ASSEMBLY
115 VAC
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104076
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104076

– 8104081

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	12
1	1004260-229	NAMEPLATE	11
1	MS3119E-22-55Y	CONNECTOR, RECEPTACLE	10
1	MS3119E-22-55X	CONNECTOR, RECEPTACLE	9
1	MS3119E-22-55	CONNECTOR, RECEPTACLE	8
1	MS3119E-22-55W	CONNECTOR, RECEPTACLE	7
16	MS35649-44	NUT, HEX	6
16	MS35337-78	WASHER, LOCK	5
20	MS15795-805	WASHER, FLAT	4
32	MS15795-803	WASHER, FLAT	3
16	MS51957-17	SCREW, PAN HEAD	2
1	2014061	PANEL	1

LIST OF MATERIALS

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

MASTER

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN R.D. [illegible] DATE 26 JAN 66
CHECKED C/C A.R. B[illegible] 26 Jan 66
APPROVAL [illegible] 3/23/66
APPROVAL [illegible] 3/23/66
APPROVAL K Brown 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL W Kupfer 29 Mar 66
MIT APPROVAL A Sarano 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
FRONT PANEL ASSY, CONNECTOR INTERFACE
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104081
SCALE	WT	SHEET 1 OF 1

8104081 –

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104082 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASE PER TDRR 27462		
A	CHANGED PER TDRR 28095 DR [illegible] CHK [illegible] APPD [illegible]	5 May 66	(DSC)

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND 1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023
3. COMPLETE SELF TEST ASSY (2014366-021) SHALL BE SUPPLIED LESS THE MODULES ASSEMBLED TO THE LOGIC PLATE ASSY (2014362-021)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	4
2	1014079	MODULE, GATED FLIP FLOP	3
32	1014034	MODULE, NOR	2
1	SEE NOTE 3	SELF TEST ASSY	1

LIST OF MATERIALS

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN E. [illegible] DATE 25 JAN 66
CHECKED A.R. Bogin 26 JAN 66
APPROVAL [illegible] 3/23/66
APPROVAL [illegible] 3/22/66
APPROVAL [illegible] 3/26/66
NASA APPROVAL A. C. METZLER
MIT APPROVAL [illegible] 25 Mar 66
MIT APPROVAL G. Harano 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
SELF TEST ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104082

SCALE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02630

8104082 A

8104082 | -

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASE PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND 1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023
3. COMPLETE SELF TEST ASSY (2014366-011) SHALL BE SUPPLIED LESS THE MODULES ASSEMBLED TO THE LOGIC PLATE ASSY (2014362-011)

8104082 | -

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	4
2	1014079	MODULE, GATED FLIP FLOP	3
32	1014034	MODULE, NOR	2
1	SEE NOTE 3	SELF TEST ASSY	1

LIST OF MATERIALS

MASTER

8104132	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN E. Ufting DATE 25 JAN 66
CHECKED A.R. Bigoni 26 JAN 66
APPROVAL 3/23/66
APPROVAL 3/28/66
APPROVAL 3/26/66
NASA APPROVAL A. G. METZGER
MIT APPROVAL 29 Mar 66
MIT APPROVAL A. Harano 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
SELF TEST ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104082
SCALE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104084 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED PER ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104087	RETROFIT INSTRUCTION BULLETIN	2
1	2014046-011	A18 INTERCONNECTION ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN KW Simpson DATE 25 JAN 66
CHECKED R. E. 26 Jan 66
APPROVAL 3/22/66
APPROVAL 3/23/66
APPROVAL K Brown 3/24/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 29 Mar 66
MIT APPROVAL 3/25/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
A18 INTERCONNECTION ASSY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104084
SCALE NONE
WT
SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 03630

–	8104085

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27462		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023
4. WIRE, ELECTRICAL, MIL-W-16878/5, EE16, WHT, FABRICATED AND ASSEMBLED PER DRAWING, 2014043-011 IN THE FOLLOWING MANNER. CUT TO LENGTH INDICATED AND STRIP ONE END .50 LONG AND TIN PER ND1002071. STRIP OTHER END .50 DO NOT TIN, AND ASSEMBLE QTY ONE, TERMINAL LUG, PART NO. MS25036-3 AND .75 LONG, INSULATION SLEEVING, PART NO. MIL-I-23053, CLASS I, WHT, ID .125. CRIMPING LUG PER ND1002206 TO UNTINNED END. WIRE TO BE MARKED "B1" AND SLEEVING TO BE MARKED "FL1-1" PER DWG 2014043 AND ND1002019
5. WIRE, ELECTRICAL, MIL-W-16878/5, EE18, WHT, FABRICATED AND ASSEMBLED PER DRAWING 2014043-011 IN THE FOLLOWING MANNER, CUT TO LENGTH INDICATED, AND STRIP ONE END .50 LONG AND TIN PER ND1002071. STRIP OTHER END .50, DO NOT TIN, AND ASSEMBLE QTY ONE, TERMINAL LUG, PART NO. MS25036-3 AND .75 LONG. INSULATION SLEEVING, PART NO. MIL-I-23053, CLASS I, WHT I.D .125. CRIMPING LUG PER ND1002206 TO UNTINNED END. WIRE TO BE MARKED "B2" AND SLEEVING TO BE MARKED "FL2-1" PER DWG 2014043 AND ND1002019
6. WIRE, ELECTRICAL MIL-W-16878/5, EE18, WHT, FABRICATED AND ASSEMBLED PER DRAWING 2014043-011, IN THE FOLLOWING MANNER, CUT TO LENGTH INDICATED AND STRIP ONE END .50 LONG AND TIN PER ND1002071. STRIP OTHER END .50 DO NOT TIN AND ASSEMBLE QTY ONE, TERMINAL LUG PART NO. MS25036-3 AND .75 LONG INSULATION SLEEVING, PART NO. MIL-I-23053, CLASS I WHT, I.D. .125. CRIMPING PER ND1002206 TO UNTINNED END. WIRE TO BE MARKED "B3" AND SLEEVING TO BE MARKED "FL3-1" PER DWG 2014043 AND ND1002019
7. WIRE, ELECTRICAL, MIL-W-16878/5, EE18, WHT, FABRICATED AND ASSEMBLED PER DRAWING 2014043-011 IN THE FOLLOWING MANNER, CUT TO LENGTH INDICATED AND STRIP ONE END .50 AND TIN PER ND1002071. STRIP OTHER END .50 DO NOT TIN AND ASSEMBLE QTY ONE, TERMINAL LUG, PART NO. MS25036-3 AND .75 LONG. INSULATION SLEEVING, PART NO. MIL-I-23053, CLASS I, WHT, I.D. .125, CRIMPING PER ND1002206 TO UNTINNED END. WIRE TO BE MARKED "B4" AND SLEEVING TO BE MARKED "FL4-1" PER DWG 2014043 AND ND1002019
8. WIRE, ELECTRICAL, MIL-W-16878/5, EE18, BLK, FABRICATED AND ASSEMBLED PER DRAWING 2014043-011 IN THE FOLLOWING MANNER, CUT TO LENGTH INDICATED AND STRIP ONE END .50 AND TIN PER ND1002071. STRIP OTHER END .50 DO NOT TIN AND ASSEMBLE QTY ONE, TERMINAL LUG, PART NO. MS25036-49 AND .75 LONG. INSULATION SLEEVING PART NO. MIL-I-23053, CLASS I, WHT, I.D. .125 CRIMPING PER ND1002206, TO UNTINNED END. WIRE TO BE MARKED "B9" AND SLEEVING TO BE MARKED "K1-4A" PER DWG 2014043 AND ND1002019
9. WIRE, ELECTRICAL, MIL-W-16878/5, EE10, BLK, FABRICATED AND ASSEMBLED PER DRAWING 2014043-011 IN THE FOLLOWING MANNER, CUT TO LENGTH INDICATED AND STRIP BOTH ENDS .50, DO NOT TIN. ASSEMBLE QTY TWO, ONE TO EACH END, TERMINAL LUG, PART NO. MS25036-56 AND TWO PEICES OF .75 LONG INSULATION SLEEVING, PART NO. MIL-I-23053, CLASS I, WHT, I.D. .187, ONE TO EACH END, CRIMPING PER ND1002206. WIRE TO BE MARKED "B14" AND SLEEVING TO BE MARKED "K1-4B" ON ONE END AND "E2" ON THE OTHER PER DWG 2014043 AND ND1002019

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	0104087	RETROFIT INSTRUCTION BULLETIN	22
	1	1006989-15	NUT, PLAIN, SELF-CLINCHING	21
	1	1006989-26	NUT, PLAIN, SELF-CLINCHING	20
	1	MS51957-43	SCREW, PAN HEAD	19
	1	2014390-011	COMPONENT BOARD A1 ASSY	18
SEE NOTE 3	1	1004260-238	PLATE, IDENT	17
*	1.0	SEE NOTE 9	JUMPER, ELECTRICAL	16
*	1.7	8		15
*	2.0	7		14
*	1.6	6		13
*	1.2	SEE NOTE 5	JUMPER, ELECTRICAL	12
	6	MS51957-47	SCREW, PAN HEAD	11
	8	MS51957-30	SCREW, PAN HEAD	10
	1	MS35338-80	WASHER, LOCK	9
	1	MS15795-807	WASHER, FLAT	8
	4	MS15795-805	WASHER, FLAT	7
	4	MS35338-79	WASHER, LOCK	6
	1	2014149-011	WIRING HARNESS	5
	1	MS27212-1-20	TERMINAL BOARD ASSY	4
	4	MS51957-18	SCREW, PAN HEAD	3
*	0.8	SEE NOTE 4	JUMPER, ELECTRICAL	2
	1	2014405	PANEL, FRONT	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

NEXT ASSY	USED ON
8104132	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN DATE 26JAN66
CHECKED R. Edward 26 Jan
APPROVAL 3/23/66
APPROVAL 3/23/66
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
AC INPUT PANEL ASSY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104085
SCALE NONE
WT
SHEET 1 OF 1

1	8104085

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

—	8104089

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CL A RELEASED PER TDRR 27704	4-1-66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT RETROFITTED PER ND1002023

8104089	—

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104098	RETROFIT INSTRUCTION BULLETIN	3
1	MS51957-80	SCREW, PAN HD	2
1	2014457-044	GROUND CABLE ASSY	1

LIST OF MATERIALS

MASTER

8104175	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J. P. Leonard DATE 16 MAR 66
CHECKED 17 MAR 66
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
TEST MOUNT ASSEMBLY
OPERATION CONSOLE
ECP - 10087

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104089

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC.

8104090 –

SYM	DESCRIPTION	DATE	APPROVED
REVISIONS			
–	CLASS A RELEASED PER TDRR 27704	4-1-66	

NOTES
1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104098	RETROFIT INSTRUCTION BULLETIN	14
4	MS51957-45	SCREW, PAN HD	13
2	MS51957-32	SCREW, PAN HD	12
8	MS35649-84	NUT, HEX	11
8	MS35337-80	WASHER, LOCK	10
2	MS35337-79	WASHER, LOCK	9
1	MS35335-61	WASHER, EXTERNAL TOOTH LOCK	8
12	MS15795-807	WASHER, FLAT	7
1	1006654	RADIO FILTER	6
1	1004260-247	PLATE, IDENTIFICATION	5
1	2016364	COVER	4
1	2014390-011	COMPONENT BOARD ASSY	3
1	2014301	PANEL, FRONT	2
1	2014198-011	WIRING HARNESS	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
8104175	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN D.Q. Clermont DATE 16 MAR 66
CHECKED 17 Mar 66
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
A C INPUT PANEL
OPERATION CONSOLE
ECP-10087

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104090
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104100 A

REVISIONS 20568						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 20573	RPY		8/10/65	

RETROFIT KIT DRAWING LIST

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	ERP/TDRR		AGC TO PSA & G/N TO SPACECRAFT WIRING HARNESS							
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.
1	PSA HARNESS - JUMPER WIRE	AGC 120	0104038	R-10020		1005707-021	8104053						
		117	0104038	R-10020		1005707-021	8104053						
		108	0104038	R-10020		1005707-021	8104053						

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN J.P. Leonard 21APR65
CHECKED
APPROVED
APPROVED Eldon C. Hall
APPROVED MIT
APPROVED MSC
DATE

G&N MASTER RETROFIT
KIT LIST. MISC. C.E.I.

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104100
SCALE NONE
SHEET 1 OF 1

8104100 A

MASTER

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104100 B

REVISIONS 20568

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 20573				
B		REVISED PER TDRR 24032	RCT			

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	ECP		RETROFIT KIT DRAWING LIST							
						AGC TO PSA & G/N TO SPACECRAFT WIRING HARNESS							
				NO.	AUTH DATE	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.
1	PSA HARNESS - JUMPER WIRE	AGC 120	0104038	R-10020		1005707-021	8104053						
		117	0104038	R-10020		1005707-021	8104053						
		108	0104038	R-10020		1005707-021	8104053						
2	ADD JUMPERS PSA	120	0104071	208		1003572-011	8104122						
	HARNESS FOR NIGHT	117											
	WATCHMAN	112											

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 21APR65
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT
KIT LIST. MISC. C.E.I.

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104100
SCALE NONE
SHEET 1 OF 1

MASTER

8104100 B

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104100 C

REVISIONS 20568						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓜ A		REVISED PER TDRR 20573	RDZ		8/10/65	
Ⓜ B		REVISED PER TDRR 24032	RCT		11/23/65	
C		REVISED PER TDRR 24774	RDZ		12/23/65	

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	ECP		RETROFIT KIT. DRAWING LIST							
						AGC TO PSA & G/N TO SPACECRAFT WIRING HARNESS							
				NO.	AUTH DATE	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.
1	PSA HARNESS - JUMPER WIRE	AGC 120	0104038	R-10020		1005707-021	8104053						
		117	0104038	R-10020		1005707-021	8104053						
		108	0104038	R-10020		1005707-021	8104053						
2	ADD JUMPERS PSA	120	0104071	208		1003572-011	8104122						
	HARNESS FOR NIGHT	117											
	WATCHMAN	112											
3	ADD EMI FIX TO	120	0104063	180		1005785-011	8104092						
	PSA HARNESS	117											
		112											

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				

FINAL	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN J. P. Sumner 21APR65
CHECKED
APPROVED
APPROVED Eldon C. Hall
APPROVED MIT W. Kupfer
APPROVED MSC
DATE

G&N MASTER RETROFIT KIT LIST. MISC. C.E.I.

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104100
SCALE NONE
SHEET 1 OF 1

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

D 8104100

REVISIONS 20568

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 20573	RDZ		8/20/65	
B		REVISED PER TDRR 24032	RCT	JCJ	11/23/65	
C		REVISED PER TDRR 24774	RDZ		12/28/65	
D		REVISED PER TDRR25156			1/14/66	

RETROFIT KIT DRAWING LIST

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	ECP		AGC TO PSA & G/N TO SPACECRAFT WIRING HARNESS							
				NO.	AUTH DATE	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.	MOD. NO.	KIT NO.
1	PSA HARNESS - JUMPER WIRE	AGC 120	0104038	R-10020		1005707-021	8104053						
		117	0104038	R-10020		1005707-021	8104053						
		108	0104038	R-10020		1005707-021	8104053						
2	ADD JUMPERS PSA	120	0104071	208		1003572-011	8104122						
	HARNESS FOR NIGHT	117											
	WATCHMAN	112											
3	ADD EMI FIX TO	120	0104063	180		1005785-011	8104092						
	PSA HARNESS	117											
		112											
4	ADD EMI FIX TO		0104064	180		1004866-011	8104128						
	PSA HARNESS (100 SERIES)												

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

FINAL

NEXT ASSY	USED ON

APPLICATION

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 21APR65
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

G&N MASTER RETROFIT
KIT LIST MISC. C.E.I.

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104100
SCALE NONE
SHEET 1 OF 1

8104100

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 20568

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

RETROFIT KIT DRAWING LIST

ITEM NO.	DESCRIPTION	EFF NO. S/N	R.I.B. NO.	ERP/TDRR		AGC TO PSA & G/N TO SPACECRAFT WIRING HARNESS							
				NO.	AUTH DATE	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.	MOD. NO.	DWG NO.

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

FINAL	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 21APR65
CHECKED
APPROVED
APPROVED Eldon C. Hall 10 May 65
APPROVED MIT
APPROVED MSC
DATE

G&N MASTER RETROFIT
KIT LIST. MISC. C.E.I.

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 8104100
SCALE NONE
SHEET 1 OF 1

MASTER

8104100

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

Ⓜ

REVISIONS 23988

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1004797		INSTRUCTION DWG	3
1	1008071-8		WASHER	2
1	0104067		RETROFIT INSTRUCTION BULLETIN	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

		DATE
DRAWN	K.W. Simpson	26 OCT '65
CHECKED	C/C A.R. Bogni	26OCT65
APPROVED		
APPROVED	Ella C Hall	29 Oct 65
APPROVED MIT	W Kupfer	5 Nov 65
APPROVED MSC		11/5/65

RETROFIT KIT LIST FOR ECP 212
POWER SWITCH MODULE

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	8104114

SCALE NONE

SHEET 1 OF 1

MODERN BLUE PRINT CO. D-19550

- 8104129

REVISIONS 25103			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASE PER 25103	6 Jan 66	WK

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND 1002214.
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND 1002023.
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND 1002023.

SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104073	RETROFIT INSTRUCTION BULLETIN	4
4	MS20470B3-4	RIVET, SOLID, UNIV HD	3
1	1006421	ENG DWG, CONTAINER, SHPNG & STOR, AGC	2
1	1004260-211	NAMEPLATE	1

LIST OF MATERIALS

8104002	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
DECIMALS .xx ± DECIMALS .xxx ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN R. Dubois DATE 28 DEC 65
CHECKED W. Wallbank 28 DEC 65
APPROVAL 5 Jan 66
APPROVAL D. O'Bryant 1/5/66
APPROVAL 1/5/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL C. Sperling 1/5/66
MIT APPROVAL W. Kupfer 6 Jan 66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY CONTAINER, SHIPPING & STORAGE, AGC

SIZE	CODE IDENT NO.	NASA DRAWING NO.
C	49956	8104129

SCALE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

MODERN BLUE PRINT CO., INC. 02059

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104151

REVISIONS 27311

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED AND MARKED IN ACCORDANCE WITH ND 1002214
3. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY SHALL BE SERIALIZED PER ND1002023.
4. ✱ INDICATES RETROFIT KITS TO BE INCORPORATED FOR NAV DSKY OF 1003706-021 CONFIGURATION ONLY, IN LIEU OF RETROFIT KITS 8104149 & 8104147.
5. ✱✱ INDICATES RETROFIT KIT TO BE INCORPORATED FOR AGC COMPUTER OF A 1003700-021 CONFIGURATION, IN LIEU OF RETROFIT KIT 8104146
6. SERIALIZE PER ND1002023. SERIAL NUMBER SAME ITEM BEING RETROFITTED. (REF: 1003770)

	QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
SEE NOTE 6	1	1004657		PLATE, IDENT	9
SEE NOTE 6	2	1004628		PLATE, IDENT	8
✱	1	8104150		RETROFIT KIT ASSY (NAV)	7
	1	8104149		RETROFIT KIT ASSY (NAV)	6
✱	1	8104148		RETROFIT KIT ASSY (MAIN)	5
	1	8104147		RETROFIT KIT ASSY (MAIN)	4
	1	8104146		RETROFIT KIT ASSY (COMP)	3
✱✱	1	8104145		RETROFIT KIT ASSY (COMP)	2
	1	0104082		RETROFIT INSTRUCTION BULLETIN	1

LIST OF MATERIALS

MASTER

8104001	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN	G.P. Tsafrikas	29 Jan 66
CHECKED		25 Jan 66
APPROVED		
APPROVED	Eldon C Hall	11 Mar 66
APPROVED MIT	A. C. METZGER	21 Mar 66
APPROVED MSC		DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
FOR ECP 295
AGC SUBSYSTEMS

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	8104151
SCALE NONE		SHEET 1 OF 1

MODERN BLUE PRINT CO. D-19550

8104163 -

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27889		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. MIL-I-23053, CLASS I, COLOR BLACK, FOR FIND 17 SIZE .125 ID, FOR FIND 18 SIZE .187 ID, FOR FIND 19 SIZE .50 ID, FOR FIND 20 SIZE .75 ID, & FOR FIND 21 SIZE 1.0 ID
4. BANDMARKER, 1006415-141 MARKED PER DWG 2014489-011

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104085	RETROFIT INSTRUCTION BULLETIN	23
3	SEE NOTE 4	BANDMARKER	22
✱ 0.2	SEE NOTE 3	SLEEVING	21
✱ 0.2	SEE NOTE 3	SLEEVING	20
✱ 0.2	SEE NOTE 3	SLEEVING	19
✱ 0.2	SEE NOTE 3	SLEEVING	18
✱ 2.0	SEE NOTE 3	SLEEVING	17
✱ 2.5	1006696-9	SLEEVING	16
✱ 2.5	1006696-6	SLEEVING	15
✱ 2.5	1006696-4	SLEEVING	14
✱ 2.5	1006696-3	SLEEVING	13
1	1000243-38	FERRULE, ELEC, CONDUCTOR	12
1	1000243-37		11
1	1000243-34		10
1	1000242-38		9
1	1000242-33		8
1	1000242-30	FERRULE, ELEC, CONDUCTOR	7
21	1010738-2	CONTACT, ELECTRICAL	6
4	1006672-005	NUT, STOP	5
2	1006672-006	GUIDE SOCKET	4
2	1006672-002	GUIDE PIN	3
152	1006491-011	CONTACT, ELEC, MALE	2
1	1006672-001	CONNECTOR	1

LIST OF MATERIALS

✱ DENOTES LENGTH IN FEET

8104069	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN G Joseph DATE 4 Feb 66
CHECKED S. J. Ruzynski 7 FEB 66
APPROVAL P. Frazier 7 APR 66
APPROVAL D. D'Angelo 4/7/66
APPROVAL 4/7/66
NASA APPROVAL 4/9/66
MIT APPROVAL 8 Apr 66
MIT APPROVAL A. Harano 4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
CABLE ASSY W15
SUB-SYSTEM KIT

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104163

SCALE NONE WT SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104163 -

8104164 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 26674	2-26-66	

NOTES:

1. IDENT PLATE SHALL BE MARKED AS SHOWN ON DWG 1020001
2. SERIAL NO. SHALL BE THE SAME AS THE UNIT BEING RETROFITTED
3. THREADS OF FIND 3 TO BE LUBRICATED PER MIL-L-8937, CLASS FORM A BEFORE BEING KITTED
4. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	0104091	BULLETIN, RETROFIT INST	4
SEE NOTE 3	12	2016351	SCREW, CAP, SOCKET HEAD	3
	4	MS20470A2-4	RIVET, SOLID, UNIVERSAL HD	2
SEE NOTES 1 & 2	1	1020085	PLATE, IDENT	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN B R Zuller DATE 3 FEB 66
CHECKED 3 FEB 66
APPROVAL 15 FEB 66
APPROVAL D O'Bryant 2/15/66
APPROVAL 2/15/66
NASA APPROVAL E. O. METZGER
MIT APPROVAL 2-26-66
MIT APPROVAL A. Harano 2/21/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
AGC HANDLING FIXTURE
ECP 304

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104164
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 03630

8104166 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 27887		
A	CHANGED PER TDRR 28392 DR. CHK APPD	5/13/66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. BANDMARKER, 1006415-141 MARKED PER DWG 2014463-011
4. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-011
5. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-021
6. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-031
7. ND1002155, TYPE III, WITH Z TYPE TRACK, & .003 ± .001 ALUMINUM FOIL, ID 1 1/2
8. MIL-I-631, TYPE F, FORM Ua, GRADE A, CLASS 1, CATEGORY 1 BLACK, AWG SIZE NO. 4

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	8	MS25036-53	TERMINAL, LUG	13
*	3.0	SEE NOTE 8	INSULATION, ELEC	12
*	127.0	SEE NOTE 7	ZIPPER TUBE, PLASTIC	11
	1	2014392-011	SELF TEST ASSY	10
	1	2014482-011	CABLE ASSY, W234	9
	1	2014483-011	CABLE ASSY, W233	8
	1	2014484-011	CABLE ASSY, W232	7
	1	2014137-011	CABLE ASSY, W226	6
	1	0104094	RETROFIT INSTRUCTION BULLETIN	5
	3	SEE NOTE 6	BANDMARKER, CABLE	4
	3	SEE NOTE 5	BANDMARKER, CABLE	3
	3	SEE NOTE 4	BANDMARKER, CABLE	2
	3	SEE NOTE 3	BANDMARKER, CABLE	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104067	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 17 FEB 66
CHECKED 18 FEB 66
APPROVAL P. 7 APR 66
APPROVAL D. O'Bryant 4/7/66
APPROVAL 4/7/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
CABLE ASSY
G & N CABLE KIT

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104166

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104166 A

8104166 -

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27887		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. BANDMARKER, 1006415-141 MARKED PER DWG 2014463-011
4. BANDMARKER, 1006415-141 MARKED PER DWG 2014762-011
5. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-021
6. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-031
7. ND1002155, TYPE III, WITH Z TYPE TRACK, & .003 ± .001 ALUMINUM FOIL, ID 1½
8. MIL-I-631, TYPE F, FORM Ua, GRADE A, CLASS 1, CATEGORY I BLACK, AWG SIZE NO. 4

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
8	MS25036-53	TERMINAL, LUG	13
* 3.0	SEE NOTE 9	INSULATION, ELEC	12
* 127.0	SEE NOTE 7	ZIPPER TUBE, PLASTIC	11
1	2014392-011	SELF TEST ASSY	10
1	2014482-011	CABLE ASSY, W234	9
1	2014483-011	CABLE ASSY, W233	8
1	2014484-011	CABLE ASSY, W232	7
1	2014137-011	CABLE ASSY, W226	6
1	0104094	RETROFIT INSTRUCTION BULLETIN	5
3	SEE NOTE 6	BANDMARKER, CABLE	4
3	SEE NOTE 5	BANDMARKER, CABLE	3
3	SEE NOTE 4	BANDMARKER, CABLE	2
3	SEE NOTE 3	BANDMARKER, CABLE	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

NEXT ASSY	USED ON
8104067	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497

DRAWN	A. Joseph	DATE 17 FEB 66
CHECKED	A. Kuper	18 FEB 66
APPROVAL	P. Maziarz	7 APR 66
APPROVAL	D. O'Bryant	4/7/66
APPROVAL		4/7/66
NASA APPROVAL		4/7/66
MIT APPROVAL		
MIT APPROVAL		4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
CABLE ASSY
G & N CABLE KIT

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104166

SCALE NONE   WT   SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

—	8104170

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27887		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLIES SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. ND1002155, TYPE III, Z TRACK, .003 ± .001 AL FOIL, ID 1 5/8
4. ND1002155, TYPE III, Z TRACK, .003 ± .001 AL FOIL, ID 3/4
5. MIL-I-631, TYPE F, FORM Ua, GRADE A, CLASS I, CATEGORY I, BLACK AWG SIZE NO. 4

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	MS25036-12	TERMINAL, LUG	10
	2	MS25036-53	TERMINAL, LUG	9
*	2.7	SEE NOTE 5	SLEEVING	8
*	4.2	SEE NOTE 4	SLEEVING	7
*	4.0	SEE NOTE 3	SLEEVING	6
	1	0104094	RETROFIT INSTRUCTION BULLETIN	5
⊛	1.4	1006696-10	SLEEVING	4
⊛	2.0	1006696-4	↑	3
⊛	2.0	1006696-3	↓	2
⊛	2.0	1006696-2	SLEEVING	1

LIST OF MATERIALS

⊛ DENOTES LENGTH IN FEET

8104067	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN J.P. Leonard DATE 1/7/66
CHECKED [illegible] 18 FEB 66
APPROVAL P. Frazier 7 APR 66
APPROVAL D. O'Bryant 4/7/66
APPROVAL [illegible] 4/7/66
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
MIT APPROVAL A. Harano 4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
AGC/PSA/SC ADAPTER ASSY
G & N CABLE KIT

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104170
SCALE NONE	WT	SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104170	—

8104173 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27704	4-1-66	

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

8104173 —

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104098	RETROFIT INSTRUCTION BULLETIN	3
32	MS35335-57	WASHER, LOCK, EXTERNAL TOOTH	2
40	MS35335-58	WASHER, LOCK, EXTERNAL TOOTH	1

LIST OF MATERIALS

MASTER

8104175	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN W. Brown DATE 16 Mar 66
CHECKED 17 Mar 66
APPROVAL
APPROVAL
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL A. Harano 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CONNECTOR INTERFACE ASSEMBLY
OPERATION CONSOLE
ECP-10087

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104173
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104174 A

SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27704	4-1-66	
A	CHANGED PER TDRR 28063 DR R Padelko CHK A. Stone P.E.D	5-27-66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. ~~SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023~~
4. BANDMARKER, 1006415-138 MARKED PER DWG 2014178
5. BANDMARKER, 1006415-137 MARKED PER DWG 2014180
6. BANDMARKER 1006415-136 MARKED PER DWG 2014181
7. BANDMARKER 1006415-096 MARKED PER DWG 2014183
8. BANDMARKER 1006415-132 MARKED PER DWG 2014184

8104174 A

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104036	RETROFIT INSTRUCTION BULLETIN	10
1	SEE NOTE 8	BAND, MARKER	9
1	SEE NOTE 7		8
1	SEE NOTE 6		7
1	SEE NOTE 5		6
1	SEE NOTE 4	BAND, MARKER	5
3	MS3193A20A	CONTACT, SOCKET	4
7	MS3192A20A	CONTACT, PIN	3
10	1010402-1	SLEEVE, SOLDER	2
10	MS25036-49	LUG, TERMINAL	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS9-497
DRAWN W. Brown DATE 15 MAR 66
CHECKED 17 Mar 66
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL A. Harano 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
WIRING HARNESS JUNCTION ASSEMBLY
OPERATION CONSOLE

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104174
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27704	4-1-66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104098	RETROFIT INSTRUCTION BULLETIN	10
1	1006415-132	BAND, MARKER	9
1	-096		8
1	-136		7
1	-137		6
1	1006415-138	BAND, MARKER	5
3	MS3193A20A	CONTACT, SOCKET	4
7	MS3192A20A	CONTACT, PIN	3
10	1010402-1	SLEEVE, SOLDER	2
10	MS25036-49	LUG, TERMINAL	1

LIST OF MATERIALS

MASTER

8104175	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN W. Brown DATE 15 MAR 66
CHECKED 17 Mar 66
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
WIRING HARNESS JUNCTION ASSEMBLY
OPERATION CONSOLE
ECP-10087

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104174

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104175 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27704	4-1-66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. SERIAL NUMBER SHALL BE THE SAME AS THE UNIT BEING RETROFITTED PER ND1002023

8104175 —

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104098	RETROFIT INSTRUCTION BULLETIN	5
1	8104174	RKA JUNCTION ASSY	4
1	8104173	RKA CONN. INTERFACE ASSY	3
1	8104090	RKA A.C. INPUT ASSY	2
1	8104089	RKA TEST MOUNT ASSY	1

LIST OF MATERIALS

MASTER

8104002	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN W. Brown DATE 16 MAR 66
CHECKED 17 Mar 66
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL R. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
OPERATION CONSOLE
ECP-10087

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104175
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104177 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27887		
A	CHANGED PER TDRR 28392 DR. CHK. APPD.	5/13/65	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. BANDMARKER 1006415-144 MARKED PER DWG 2016360-011
4. BANDMARKER 1006415-145 MARKED PER DWG 2016360-011
5. ND1002155, TYPE III, Z TYPE TRACK, .003±.001 ALUMINUM FOIL, ID 2.00
6. ND1002155, TYPE III, Z TYPE TRACK, .003±.001 ALUMINUM FOIL, ID 2.250
7. MIL-I-631, TYPE F, FORM Ua, GRADE a, CLASS I, CATEGORY I, BLACK, AWG SIZE NO.4

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104094	RETROFIT INSTRUCTION BULLETIN	17
1	MS25036-6	TERMINAL LUG	16
1	MS25036-11	TERMINAL LUG	15
3	MS25036-53	TERMINAL LUG	14
* 2.5	SEE NOTE 7	INSULATION SLEEVING	13
1.9	SEE NOTE 6	ZIPPER TUBING, PLASTIC	12
* 3.3	SEE NOTE 5	ZIPPER TUBING, PLASTIC	11
~~1~~	~~SEE NOTE 4~~	~~BANDMARKER, CABLE~~	~~10~~
4	SEE NOTE 3	BANDMARKER, CABLE	9
* 1.5	1006696-2	ZIPPER TUBING	8
* 4.8	1006696-3	ZIPPER TUBING	7
* 4.5	1006696-4	ZIPPER TUBING	6
2	MS21208-C0620	INSERT, SCREWTHREAD	5
2	MS15795-805	WASHER, FLAT	4
2	MS35338-79	WASHER, LOCK	3
2	MS51957-31	SCREW, PAN HD	2
1	2014427-003	BRACKET, STRAIN-RELIEF	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104067	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 25 MAR 66
CHECKED 28 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL 4/7/66
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL 4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CABLE ASSY W205
G & N CABLE KIT

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104177

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

-	8104177

REVISIONS

SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27887		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. BANDMARKER 1006415-144 MARKED PER DWG 2016360-011
4. BANDMARKER 1006415-145 MARKED PER DWG 2016360-011
5. ND1002155, TYPE III, Z TYPE TRACK, .003±.001 ALUMINUM FOIL, ID 2.00
6. ND1002155, TYPE III, Z TYPE TRACK, .003±.001 ALUMINUM FOIL, ID 2.250
7. MIL-I-631, TYPE F, FORM Ua, GRADE a, CLASS I, CATEGORY I, BLACK, AWG SIZE NO.4

LIST OF MATERIALS

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	0104094	RETROFIT INSTRUCTION BULLETIN	17
	1	MS25036-6	TERMINAL LUG	16
	1	MS25036-11	TERMINAL LUG	15
	3	MS25036-53	TERMINAL LUG	14
*	2.5	SEE NOTE 7	INSULATION SLEEVING	13
	1.9	SEE NOTE 6	ZIPPER TUBING, PLASTIC	12
*	3.3	SEE NOTE 5	ZIPPER TUBING, PLASTIC	11
	1	SEE NOTE 4	BANDMARKER, CABLE	10
	4	SEE NOTE 3	BANDMARKER, CABLE	9
*	1.5	1006696-2	ZIPPER TUBING	8
*	4.8	1006696-3	ZIPPER TUBING	7
*	4.5	1006696-4	ZIPPER TUBING	6
	2	MS21208-C0620	INSERT, SCREWTHREAD	5
	2	MS15795-85	WASHER, FLAT	4
	2	MS35338-79	WASHER, LOCK	3
	2	MS51957-31	SCREW, PAN HD	2
	1	2014427-003	BRACKET, STRAIN-RELIEF	1

* DENOTES LENGTH IN FEET

NEXT ASSY	USED ON
8104067	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 25 MAR 66
CHECKED 28 MAR 66
APPROVAL 7 APR 66
APPROVAL 4/7/66
APPROVAL 4/7/66
NASA APPROVAL 4/9/66
MIT APPROVAL
MIT APPROVAL 4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CABLE ASSY W205
G & N CABLE KIT

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104177
SCALE NONE
WT
SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104177	1

8104178 | -

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 27702	4-1-66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. ND1002155, TYPE III, WITH Z TYPE TRACK & .003 ±.001 ALUMINUM FOIL, ID 1.50
4. MIL-I-631, TYPE F, FORM U2, GRADE 2, CLASS I, CATEGORY I, COLOR BLACK, AWG SIZE NO. 4
5. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-011
6. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-021
7. BANDMARKER, 1006415-141 MARKED PER DWG 2014462-031
8. BANDMARKER, 1006415-141 MARKED PER DWG 2014463-011

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	0104051	RETROFIT INST BULLETIN	8
	3	SEE NOTE 8	BAND MARKER, CABLE	7
	3	SEE NOTE 7	BAND MARKER, CABLE	6
	3	SEE NOTE 6	BAND MARKER, CABLE	5
	3	SEE NOTE 5	BAND MARKER, CABLE	4
	8	MS25036-53	TERMINAL, LUG	3
*	2.8	SEE NOTE 4	INSULATION, ELEC	2
*	122.0	SEE NOTE 3	ZIPPER TUBING, PLASTIC	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28 MAR 66
CHECKED 28 MAR 66
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL E. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
GSE P&M CABLE SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104178

SCALE NONE | WT | SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104178 -

8104182 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 28089	4/19/66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
18	1006446-003	LENS, CAP	8
4	MS35338-79	WASHER, LOCK	7
4	1006997	WASHER, FLAT	6
4	MS51957-29	SCREW, PAN HD	5
4	1014212	STAND-OFF, PROGRAM	4
1	0104053	RETROFIT INST. BULLETIN	3
1	1004260-260	NAMEPLATE	2
2	1014034	MODULE, NOR	1

LIST OF MATERIALS

MASTER

8104181	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 29MAR66
CHECKED 31 MAR 66
APPROVAL 12 APR 66
APPROVAL 4/14/66
APPROVAL 4/1/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/19/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
LOGIC DRAWER ASSY, NO. 1
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104182
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

8104182 —

8104184	-

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 28089	4/16/66	

NOTES:

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. IDENTIFY FIND 2 WIRE "F182" & FIND 3 WIRE "F183" PER ND1002019
4. BAND, MARKER 1006415-136 MARKED PER DWG 2016416
5. MIL-I-631, TYPE F, FORM U2, GRADE A CLASS 1, CATEGORY I COLOR BLACK, AWG SIZE NO. 12

8104184 | -

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	1006405-198	SWITCH, PUSH, LENS	7
*	0.2	SEE NOTE 5	SLEEVING, INSULATION	6
	1	SEE NOTE 4	BAND, MARKER	5
	1	0104053	RETROFIT INSTRUCTION BULLETIN	4
SEE NOTE 3 *	0.5	MIL-W-16878/4 E24 BLK	WIRE, ELECTRICAL	3
SEE NOTE 3 *	0.5	MIL-W-16878/4 E24 WHT	WIRE, ELECTRICAL	2
	1	1004260-264	NAMEPLATE	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

MASTER

8104181	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 29 MAR 66
CHECKED 30 MAR 66
APPROVAL 12 APR 66
APPROVAL D. O'Bryant 4/14/66
APPROVAL 4/14/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/14/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
DRAWER ASSY, X Y INTERFACE
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104184

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02630

8104187 -

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 28089	4/16/66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	MS35338-79	WASHER, LOCK	8
4	1006997	WASHER, FLAT	7
4	MS51957-29	SCREW, PAN HD	6
4	1014212	STAND-OFF, PROGRAM	5
2	1014034	MODULE, NOR	4
1	1006446-003	LENS, CAP	3
1	0104053	RETROFIT INSTRUCTION BULLETIN	2
1	1004260-268	NAME PLATE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104181	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .xx ±
DECIMALS .xxx ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 29 MAR 66
CHECKED 31 MAR 66
APPROVAL 12 APR 66
APPROVAL 4/14/66
APPROVAL 4/1-166
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/19/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
SELF TEST ASSY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104187
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02020

8104187 -

8104188	—

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 28089	4/18/66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. RUBBER STAMP .08 HIGH NORMAL GOTHIC CHARACTER MOUNTED ON 1/8 X 1/8 X 2 LONG WOODEN APPLICATOR, 0 CHARACTER FOR FIND 2, 1 CHARACTER FOR FIND 3, 4 CHARACTER FOR FIND 4, 5 CHARACTER FOR FIND 5, & 6 CHARACTER FOR FIND 6
4. RUBBER STAMP .12 HIGH NORMAL GOTHIC CHARACTER MOUNTED ON 3/16 X 3/16 X 2 LONG WOODEN APPLICATOR 0 CHARACTER FOR FIND 8, 2 CHARACTER FOR FIND 9 & 1 CHARACTER FOR FIND 10
5. INK, BLACK, EPOXY, QTY 25 PARTS, BY WEIGHT, CONTAINED IN A 1 OZ CONTAINER
6. CATALYST, QTY 7 3/4 PARTS, BY WEIGHT, CONTAINED IN A 1 OZ CONTAINER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104053	RETROFIT INSTRUCTION BULLETIN	12
FOR QTY SEE NOTE 6	1006272	CURING AGENT, EPOXY INK	11
FOR QTY SEE NOTE 5	1006271-10	INK, BLACK, EPOXY	10
1	SEE NOTE 4	STAMP, RUBBER	9
1	SEE NOTE 4		8
1	SEE NOTE 4		7
1	SEE NOTE 3		6
1	SEE NOTE 3		5
1	SEE NOTE 3		4
1	SEE NOTE 3		3
1	SEE NOTE 3	STAMP, RUBBER	2
1	SIZE NUMBER NO. 1	PAD, STAMP, CLOTH NON-INKED	1

LIST OF MATERIALS

8104188	1

MASTER

NEXT ASSY	USED ON
8104181	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 30MAR66
CHECKED 31MAR66
APPROVAL P. Francis 12APR66
APPROVAL 4/14/66
APPROVAL 4/ /66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/14/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
INTERCONNECTION PLATE ASSY, A18
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104188

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104190 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27703	4-1-66	
A	CHANGED PER TDRR 28091 DR O.J. Biron CHK C. [illegible] APPD R.D	8/31/66	

NOTES:

1. PREPARATION FOR DELIVERY:
   RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION:
   EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. BANDMARKER, 1006415-138, MARKED PER DWG 2014481
4. BANDMARKER, 1006415-140, MARKED PER DWG 2014154
5. BANDMARKER, 1006415-106, MARKED PER DWG 2014153
6. BANDMARKER, 1006415-134, MARKED PER DWG 2014480

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	SEE NOTE 6	BANDMARKER	11
1	0104099	RETROFIT INSTRUCTION BULLETIN	10
32	MS35335-59	WASHER, LOCK, EXT TOOTH	9
40	MS35335-58	WASHER, LOCK, EXT TOOTH	8
3	MS3193A20A	CONTACT, SOCKET	7
7	MS3192A20A	CONTACT, PIN	6
1	SEE NOTE 5	BANDMARKER	5
1	SEE NOTE 4	BANDMARKER	4
1	SEE NOTE 3	BANDMARKER	3
10	MS25036-49	LUG, TERMINAL	2
10	1010402-1	SLEEVE, SOLDER	1

NEXT ASSY	USED ON
8104002	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN O.J. Biron DATE 28 MAR 66
CHECKED 29 MAR 66
APPROVAL 3/29/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
CABLE ASSY W12, W15, W18
CONNECTOR INTERFACE
CTS ECP-0215

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104190
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104190 A

8104190 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED FER TDRR 27703	4-1-66	

NCTES:

1. PREPARATION FOR DELIVERY:
   RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION:
   EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. BANDMARKER, 1006415-138, MARKED PER DWG 2014481
4. BANDMARKER, 1006415-140, MARKED PER DWG 2014154
5. BANDMARKER, 1006415-106, MARKED PER DWG 2014153

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104099	RETROFIT INSTRUCTION BULLETIN	10
32	MS35335-57	WASHER, LOCK, EXT TOOTH	9
40	MS35335-58	WASHER, LOCK, EXT TOOTH	8
3	MS3193A20A	CONTACT, SOCKET	7
7	MS3192A20A	CONTACT, PIN	6
1	SEE NOTE 5	BANDMARKER	5
1	SEE NOTE 4	BANDMARKER	4
1	SEE NOTE 3	BANDMARKER	3
10	MS25036-49	LUG, TERMINAL	2
10	1010402-1	SLEEVE, SOLDER	1

LIST OF MATERIALS

8104002	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A.J. Brion DATE 28 MAR 66
CHECKED W. Wolf Kours 29 MAR 66
APPROVAL 3/31/66
APPROVAL
APPROVAL 3/31/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL M G Meuly 4-1-66
MIT APPROVAL 4/1/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
CABLE ASSY W12, W15, W18
CONNECTOR INTERFACE
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	D	8104190

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104190 —

8104191	A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 28083		
A	CHANGED PER TDRR 28372 DR. CHK APPD	5/13/66	

NOTES:

1. PREPARATION FOR DELIVERY:
   RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION:
   EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3 BANDMARKER, 1006415-191, MARKED PER DRAWING 2016409
4 BANDMARKER, 1006415-096, MARKED PER DRAWNG 2016412
5 BANDMARKER, 1006415-135, MARKED PER DRAWING 2016413
6 FIND 11 WIRE TO BE MADE UP INTO FOUR(4) 36 INCH LEADS. STRIP ONE END .25(DO NOT TIN) AND INSTALL FIND 10 ON EACH LEAD PER ND1002206, MARK CONDUCTOR IDENTIFICATIONS (F101, F102, F103 & F104) ON EACH LEAD PER ND1002019 (SEE DRAWING 2016412-011)
7 FIND 13 WIRE TO BE MADE-UP INTO THREE(3) 60 INCH TWISTED LEADS. STRIP ONE END .19(DO NOT TIN) OF EACH CONDUCTOR ON TWO(2) TWISTED PAIRS. ATTACH FIND 12 PER ND1002206 INSTALL ONE PIECE OF FIND 14 ON EACH END OF THREE LEADS AND MARK CONDUCTOR IDENTIFICATION (A165, A166 & 161) PER ND1002019 (SEE DRAWING 2016413-011)
8 MIL-I-23053, CLASS 1, COLOR WHT, ID .125
9 FIND 15 TO BE MADE UP INTO THREE(3) 5 INCH JUMPERS AND ONE(1) 3 INCH JUMPER STRIP BOTH ENDS OF JUMPERS .50 AND TIN PER ND1002071. MARK EACH JUMPER WITH CONDUCTOR IDENTIFICATION (B112, B113 & B114 FOR 5 INCH LEADS)(B81 FOR 3 INCH LEAD) PER ND1002019 (SEE DRAWING 2016397)

*DENOTES LENGTH IN FEET

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	8104174	RKA WIRING HARNESS, JUNCT. ASSY.	17
	1	0104036	RETROFIT INSTRUCTION BULLETIN	16
SEE NOTE 9 *	1.5	MIL-W-16878/4 E22	WIRE, ELECTRICAL, WHITE	15
SEE NOTE 7 *	.5	SEE NOTE 8	INSULATION, SLEEVING	14
*	15	1014391-11	WIRE, ELEC (TWISTED PAIR)	13
	4	1006491-012	CONTACT, ELEC	12
SEE NOTE 6 *	12	MIL-W-16878/4 E24	WIRE, ELEC, WHT	11
	4	1006488-004	CONTACT, TAPERED	10
	4	1006491-009	CONTACT, ELEC	9
	1	SEE NOTE 5	BANDMARKER	8
	1	SEE NOTE 4	BANDMARKER	7
	1	SEE NOTE 3	BANDMARKER	6
	1	1006465-004	SWITCH, ROTARY	5
	4	AN535-4-4	SCREW, DRIVE	4
	1	1004260-266	NAMEPLATE	3
	1	1004260-267	NAMEPLATE	2
	1	1004260-259	NAMEPLATE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28MAR66
CHECKED 29MAR66
APPROVAL 12 APR 66
APPROVAL 3/13/66
APPROVAL 4/13/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
OPERATIONAL CONSOLE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104191
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104191	A

8104191 —

SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 28083		

NOTES:

1. PREPARATION FOR DELIVERY:
   RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION:
   EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

3. BANDMARKER, 1006415-141, MARKED PER DRAWING 2016409
4. BANDMARKER, 1006415-096, MARKED PER DRAWNG 2016412
5. BANDMARKER, 1006415-135, MARKED PER DRAWING 2016413
6. FIND 11 WIRE TO BE MADE UP INTO FOUR(4) 36 INCH LEADS. STRIP ONE END .25(DO NOT TIN) AND INSTALL FIND 10 ON EACH LEAD PER ND1002206, MARK CONDUCTOR IDENTIFICATIONS (F101, F102, F103 & F104) ON EACH LEAD PER ND1002019 (SEE DRAWING 2016412-011)
7. FIND 13 WIRE TO BE MADE-UP INTO THREE(3) 60 INCH TWISTED LEADS. STRIP ONE END .19(DO NOT TIN) OF EACH CONDUCTOR ON TWO(2) TWISTED PAIRS. ATTACH FIND 12 PER ND1002206 INSTALL ONE PIECE OF FIND 14 ON EACH END OF THREE LEADS AND MARK CONDUCTOR IDENTIFICATION (A165, A166 & 167) PER ND1002019 (SEE DRAWING 2016413-011)
8. MIL-I-23053, CLASS 1, COLOR WHT, ID .125
9. FIND 15 TO BE MADE UP INTO THREE(3) 5 INCH JUMPERS AND ONE(1) 3 INCH JUMPER STRIP BOTH ENDS OF JUMPERS .50 AND TIN PER ND1002071. MARK EACH JUMPER WITH CONDUCTOR IDENTIFICATION (B112, B113 & B114 FOR 3 INCH LEADS)(B81 FOR 1.5 INCH LEAD) PER ND1002019 (SEE DRAWING 2016397)

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	8104174	RKA WIRING HARNESS, JUNCT. ASSY.	17
	1	0104036	RETROFIT INSTRUCTION BULLETIN	16
SEE NOTE 9 *	1.5	MIL-W-16878/4 E22	WIRE, ELECTRICAL, WHITE	15
SEE NOTE 7 *	.5	SEE NOTE 8	INSULATION, SLEEVING	14
SEE NOTE 7 *	15	1014391-11	WIRE, ELEC (TWISTED PAIR)	13
SEE NOTE 7	4	1006491-012	CONTACT, ELEC	12
SEE NOTE 6 *	12	MIL-W-16878/4 E24	WIRE, ELEC, WHT	11
SEE NOTE 6	4	1006488-004	CONTACT, TAPERED	10
	4	1006491-009	CONTACT, ELEC	9
	1	SEE NOTE 5	BANDMARKER	8
	1	SEE NOTE 4	BANDMARKER	7
	1	SEE NOTE 3	BANDMARKER	6
	1	1006465-004	SWITCH, ROTARY	5
	4	AN535-4-4	SCREW, DRIVE	4
	1	1004260-266	NAMEPLATE	3
	1	1004260-267	NAMEPLATE	2
	1	1004260-259	NAMEPLATE	1

LIST OF MATERIALS

*DENOTES LENGTH IN FEET

MASTER

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 28MAR66
CHECKED 29MAR66
APPROVAL 12 APR 66
APPROVAL 3/13/66
APPROVAL 4/12/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/13/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSY
OPERATIONAL CONSOLE

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104191
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104192 | —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 27885		

NOTES

1. PREPARATION FOR DELIVERY:
   RETROFIT KIT ASSY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION:
   EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104050	RETROFIT INSTRUCTION BULLETIN	3
95	1006760-44	RESISTOR, 3300Ω, ±2%, 1/8 W	2
1	1004260-265	PLATE, NAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN DATE 28MAR66
CHECKED 29MAR66
APPROVAL 7APR66
APPROVAL 4/7/66
APPROVAL 4/7/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/7/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
BUFFER CIRCUIT ASSY

CODE IDENT NO. 49956
SIZE D
NASA DRAWING NO. 8104192
SCALE NONE
WT
SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

8104192 | —

-	8104195

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 28065	4/16/66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. CABLE BAND MARKER 1006415-105 MARKED PER DWG 2014137
4. CABLE BAND MARKER 1006415-019 MARKED PER DWG 2014137
5. CABLE BAND MARKER 1006415-053 MARKED PER DWG 2014137
6. CABLE BAND MARKER 1006415-054 MARKED PER DWG 2014137
7. MIL-I-631, TYPE F, FORM U, SUBFORM a, GRADE a, CLASS 1, CATEGORY 1, COLOR BLACK, AWG 4
8. MIL-I-23053, CLASS 1, COLOR WHITE, ID .125
9. AR DENOTES AS REQUIRED

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	0104067	RETROFIT INST. BULLETIN	14
*	0.3	SEE NOTE 8	INSULATION TUBING	13
*	50.0	1010989	WIRE MESH	12
	1	1010402-2	SLEEVE, SOLDER	11
	28	1010402-1	SLEEVE, SOLDER	10
*	1.0	SEE NOTE 7	SLEEVING, INSULATION	9
	2	SEE NOTE 6	CABLE BAND MARKER	8
	1	SEE NOTE 5	CABLE BAND MARKER	7
	1	SEE NOTE 4	CABLE BAND MARKER	6
	1	SEE NOTE 3	CABLE BAND MARKER	5
	3	MS25036-53	TERMINAL LUG	4
	3	MS25036-49	TERMINAL LUG	3
	1	MS25036-11	TERMINAL LUG	2
	1	MS25036-6	TERMINAL LUG	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

MASTER

8104180	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN Tom Hillson DATE 12 APR 66
CHECKED 14APR66
APPROVAL
APPROVAL D Parker 4/15/66
APPROVAL 4/16/66
NASA APPROVAL
MIT APPROVAL 4-18-66
MIT APPROVAL 4/18/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CABLE ASSY W226
G & N

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104195
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02620

–	8104196

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
–	CLASS A RELEASED PER TDRR 28065	4/14/66	

NOTES

1. PREPARATION FOR DELIVERY:
RETROFIT KIT ASSEMBLIES SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED PER ND1002214
2. IDENTIFICATION:
EACH RETROFIT KIT ASSY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. MIL-I-631, TYPE F, FORM U 2, GRADE 2, CLASS I, CATEGORY I, COLOR BLACK, AWG SIZE NO. 4
4. MIL-I-23053, CLASS I, COLOR WHITE, ID .125
5. BANDMARKER, 1006415-142 MARKED PER DWG 2014482

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	0104067	RETROFIT INSTRUCTION BULLETIN	8
	1	SEE NOTE 5	BANDMARKER	7
	5	1010402-1	SLEEVE, SOLDER	6
*	0.5	SEE NOTE 4	SLEEVING, SHRINK	5
	5	MS25036-49	LUG, TERMINAL	4
*	1.0	SEE NOTE 3	SLEEVING, INSULATION	3
	2	1010402-2	SLEEVE, SOLDER	2
	1	1010738-1	CONTACT	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104180	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

DECIMALS	DECIMALS	ANGLES
.XX ±	.XXX ±	±

DO NOT SCALE DRAWING

MATERIAL

MASTER

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.

CONTRACT NO. NAS 9-497
DRAWN A. J. Brion DATE 5APR66
CHECKED S. J. Rzepecki 7APR66
APPROVAL P. Frazee 4/14/66
APPROVAL D. O. Bryant 4/14/66
APPROVAL 4/14/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/14/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CABLE ASSY W234
G & N

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104196
SCALE NONE	WT	SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02869

-	8104197

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS A RELEASED PER TDRR 28065	4/14/66	

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED & MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. MIL-I-23053, CLASS I, WHITE, ID .125
4. MARKER, BAND 1006415-137 MARKED PER DWG 2014483

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	0104067	RETROFIT INST BULLETIN	10
	1	SEE NOTE 4	MARKER, BAND	9
*	0.3	SEE NOTE 3	SLEEVING, SHRINK	8
	3	MS25036-49	LUG, TERMINAL	7
	1	MS25036-12	LUG, TERMINAL	6
	1	MS25036-11	LUG, TERMINAL	5
*	0.2	1006696-6	SLEEVING, INSULATION	4
	4	1006491-011	CONTACT, MALE	3
	1	MS25036-18	LUG, TERMINAL	2
	5	1010402-1	SLEEVE, SOLDER	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

NEXT ASSY	USED ON
8104180	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN DATE 6APR66
CHECKED 7APR66
APPROVAL 4/14/66
APPROVAL 4/14/66
APPROVAL 4/14/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 4/19/66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
CABLE ASSY W233
G&N

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104197

SCALE NONE
WT
SHEET 1 OF 1

MASTER

INTERPRET DRAWING IN ACCORDANCE WITH PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02869

-
8104197

SYM	DESCRIPTION	DATE	APPROVED
REVISIONS			
—	CLASS A RELEASED PER TDRR 29054		
A	CHANGED PER TDRR 29202 DR S. Roberts CHK G. Kupfer APPD	6/16/66	Jal

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. RUBBER STAMP .12 HIGH NORMAL GOTHIC CHARACTER MOUNTED ON 3/16 X 3/16 X 2 LONG WOODEN APPLICATOR, "0" CHARACTER FOR FIND 15, "3" CHARACTER FOR FIND 16 & "1" CHARACTER FOR FIND 17
4. INK, BLACK, EPOXY, QUANTITY 25 GRAMS, CONTAINED IN A 1 OZ CONTAINER
5. CATALYST, QUANTITY 1 3/4 GRAMS, CONTAINED IN A 1 OZ CONTAINER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	CYFM30C822J	CAPACITOR 8200 PF 300V	21
1	1004260-274	NAMEPLATE	20
1	1004260-273	NAMEPLATE	19
1	0104016	RETROFIT INST BULLETIN	18
1	SEE NOTE 3	STAMP, RUBBER	17
1	SEE NOTE 3	STAMP, RUBBER	16
1	SEE NOTE 3	STAMP, RUBBER	15
1	8104202	ENG DWG, RETROFIT KIT ASSY	14
1	SIZE NUMBER 1	PAD STAMP, CLOTH, UNINKED	13
SEE NOTE 5 •	1006272	CATALYST	12
SEE NOTE 4 •	1006271-10	INK, BLACK, EPOXY	11
4	AN535-4-4	SCREW, DRIVE, BUTTON HD	10
1	CS13AF010K	CAPACITOR, 1uf, 35V	9
1	1004260-272	NAMEPLATE	8
1	1004260-271	NAMEPLATE	7
1	1004260-270	NAMEPLATE	6
2	MS35338-79	WASHER, LOCK	5
2	1006997	WASHER, FLAT	4
2	1014212	STANDOFF, PROGRAM	3
2	MS51957-29	SCREW, PAN HD	2
1	1014230	MODULE, INTERFACE REC	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±
DECIMALS .XXX ±
ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON
RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A. L. Davis DATE 14 MAY 66
CHECKED J. Walkowicz 14 MAY 66
APPROVAL R. J. Blackman 14 MAY 66
APPROVAL D. Bryant 5/18/66
APPROVAL F. J. Brennan 5/19/66
NASA APPROVAL B. C. [illegible]
MIT APPROVAL M. G. Murphy 5-20-66
MIT APPROVAL Dennis M. Scolamiero 19 May 66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO. 49956
SIZE C
NASA DRAWING NO. 8104202
SCALE NONE
WT
SHEET 1 OF 1

8104202 A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02020

8104202 —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 29054		

NOTES

1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023
3. RUBBER STAMP .12 HIGH NORMAL GOTHIC CHARACTER MOUNTED ON 3/16 X 3/16 X 2 LONG WOODEN APPLICATOR, "0" CHARACTER FOR FIND 15, "3" CHARACTER FOR FIND 16 & "1" CHARACTER FOR FIND 17
4. INK, BLACK, EPOXY, QUANTITY 25 GRAMS, CONTAINED IN A 1 OZ CONTAINER
5. CATALYST, QUANTITY 1 3/4 GRAMS, CONTAINED IN A 1 OZ CONTAINER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104016	RETROFIT INST BULLETIN	18
1	SEE NOTE 3	STAMP, RUBBER	17
1	SEE NOTE 3	STAMP, RUBBER	16
1	SEE NOTE 3	STAMP, RUBBER	15
1	8104202	ENG. DWG, RETROFIT KIT ASSY	14
1	SIZE NUMBER 1	PAD STAMP, CLOTH, UNINKED	13
SEE NOTE 5 ●	1006272	CATALYST	12
SEE NOTE 4 ●	1006271-10	INK, BLACK, EPOXY	11
4	AN535-4-4	SCREW, DRIVE, BUTTON HD	10
1	CS13AF010K	CAPACITOR, 1uf, 35V	9
1	1004260-272	NAMEPLATE	8
1	1004260-271	NAMEPLATE	7
1	1004260-270	NAMEPLATE	6
2	MS35338-79	WASHER, LOCK	5
2	1006997	WASHER, FLAT	4
2	1014212	STANDOFF, PROGRAM	3
2	MS51957-29	SCREW, PAN HD	2
1	1014230	MODULE, INTERFACE REC	1

LIST OF MATERIALS

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± DECIMALS .XXX ± ANGLES ±

DO NOT SCALE DRAWING

MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO. NAS 9-497
DRAWN A. L. Davis DATE 14 MAY 66
CHECKED 14 MAY 66
APPROVAL 5/18/66
APPROVAL 5/18/66
APPROVAL 5/19/66
NASA APPROVAL
MIT APPROVAL
MIT APPROVAL 19 Aug. 66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104202

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02820

8104202 —

8104215 | —

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
—	CLASS A RELEASED PER TDRR 33458	30 MAR 67	CA

NOTES
1. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, PACKED AND MARKED IN ACCORDANCE WITH ND1002214.
2. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY PREPARED FOR SHIPMENT SHALL BE SERIALIZED PER ND1002023.
3. STENCIL MARKED "051", "041" & "031" -.12 HIGH CHARACTERS PER ND1002019
4. STENCIL .08 HIGH CHARACTERS "RAY" AND DIGITS "0" THRU "9" PER ND1002019.
5. MIL-I-631, TYPE F, FORM U2, GRADE 2, CLASS I, CATEGORY I, COLOR CLEAR, AWG SIZE NO.8.
6. SERIAL NUMBERS SHALL BE THE SAME AS THE UNITS BEING RETROFITTED.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
* 5.0	1006945-1	WIRE, ELECTRICAL, BLUE	15
1	1004260-284	NAMEPLATE	14
1	CY22C751G	CAPACITOR, 750pf, 500V	13
1 OZ	1006271-1	INK, WHITE	12
1 OZ	1006271-10	INK, BLACK	11
* .25	SEE NOTE 5	INSULATION, SLEEVING	10
	SEE NOTE 3	STENCIL	9
4	AN535-4-4	DRIVE SCREW, BUTTON HEAD	8
	SEE NOTE 4	STENCIL	7
1	0104107	RETROFIT INSTRUCTION BULLETIN	6
1	1004260-279	NAMEPLATE	5
1	1004260-283	NAMEPLATE	4
1	1004260-282	NAMEPLATE	3
* .5	1006776-197	INSULATION SLEEVING	2
3	CS13AFC10K	CAPACITOR, 1µf, 35V	1

LIST OF MATERIALS

* DENOTES LENGTH IN FEET

8104215 | —

NEXT ASSY	USED ON
8104002	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±   DECIMALS .XXX ±   ANGLES ±
DO NOT SCALE DRAWING
MATERIAL

RAYTHEON CO.
LEXINGTON, MASS.
CONTRACT NO.
DRAWN S. Roberts DATE 7 DEC 66
CHECKED 16 DEC 66
APPROVAL 21 DEC 66
APPROVAL
APPROVAL 11 JAN 67
NASA APPROVAL
MIT APPROVAL 1-6-67
MIT APPROVAL 5 Jan 1967

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT ASSEMBLY
COMPUTER TEST SET

CODE IDENT NO.	SIZE	NASA DRAWING NO.
49956	C	8104215

SCALE NONE WT SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH PRESCRIBED BY MIL-D-70327

MODERN BLUE PRINT CO., INC. 02969

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 33001

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
–						

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. IDENTIFY NAME PLATE WITH PART NO. 1003770-211

8104220

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1004657		NAME PLATE	
1	1003230-011		TEST CONNECTOR	2
1	0104110		RETROFIT INSTRUCT'ON BULLETIN	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN	[illegible]	12/22/66
CHECKED	[illegible]	1/7/67
APPROVED		
APPROVED	Elden C. Hall	10 Feb 67
APPROVED [redacted] CCA	[illegible]	3/14/67
APPROVED MSC	[illegible]	3/19/67
		DATE

RETROFIT KIT LIST
FOR ECP 474
TEST CONNECTOR, AGC

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	8104220

SCALE NONE

SHEET 1 OF 1

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 33814

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STENCIL "0" THRU "9", "-051" AND "-041" DIGITS, .08/.10 HIGH PER ND1002019
3. STENCIL "USE IN D- ONLY", "RELAY MODULES IN THIS DSKY MUST BE USED IN THE FOLLOWING POSITION ONLY" AND "THIS DSKY CONTAINS THE FOLLOWING RELAY MODULES" CHARACTERS, .08/.10 HIGH PER ND1002019
4. STENCIL "POSITION MODULE -

POSITION	MODULE
D-	S/N
D-	S/N
D-	S/N
D-	S/N"

CHARACTERS, .08/.10 HIGH PER ND1002019

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
6 OZ	MIL-A-5092, TYPE II		ADHESIVE	17
1	SEE NOTE 4		STENCIL	16
1	SEE NOTE 3		STENCIL	15
1	SEE NOTE 3		STENCIL	14
1	SEE NOTE 3		STENCIL	13
1	SEE NOTE 2		STENCIL	12
1	SEE NOTE 2		STENCIL	11
2	SEE NOTE 2		STENCIL	10
4	1004920		STRIP GROUNDING	9
4 OZ	1006338-000		SEALING COMPOUND, SILICONE RUBBER	8
8	1004917		WASHER	7
4	1004921		VIBRATION ISOLATOR	6
8	NAS1593-006		"O" RING	5
8	1004916		PIN, STOP	4
24	MS35233-13		SCREW	3
4	1004919-002		VIBRATION WASHER	2
1	0104117		RETROFIT INSTRUCTION BULLETIN	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 4/12/67
CHECKED E. Urban 4/12/67
APPROVED
APPROVED
APPROVED ~~MIT~~ 7/12
APPROVED MSC 5/8
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST FOR ECP 0441 MAIN DSKY

CODE IDENT NO. 80230
SIZE C
DRAWING NO. 8104229
SCALE NONE
SHEET 1 OF 1

8104229

MODERN BLUE PRINT CO., INC.

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 34219

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2. STENCIL .08/.10 INCH HIGH CHARACTERS "2003092-051" AND "2003092-061" PER ND1002019

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	0104121		RETROFIT INSTRUCTION BULLETIN	5
2	SEE NOTE 2		STENCIL	4
1	1004260-19		NAME PLATE	3
30'	1006376-003		WIRE ELEC. INS.	2
2	2003892-011		POWER SUPPLY MOD A30-31	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 6-6-67
CHECKED 6-8-67
APPROVED Eldon C Hall 6/23/67
APPROVED
APPROVED CES 7/27/67
APPROVED MSC 1/27/67
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST
FOR ECP NO. 0518
(AGC COMPUTER)

CODE IDENT NO. 80230
SIZE C
DRAWING NO. 8104233
SCALE NONE
SHEET 1 OF 1

8104233

MODERN BLUE PRINT CO., INC. 02840

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 35064

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, AND MARKED IN ACCORDANCE WITH ND1002214
3. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY SHALL BE SERIALIZED PER ND1002023
4. MARK FIND NO. 6 WITH CHARACTERS PER ND1002019
   MARK "UNIV. DSKY ASSEMBLY" PART NO, SEE R.I.B 0104126 FOR NUMBER AND CONTRACT NO. "NAS 9-497."
5. FIND NO. 4 SHALL NOT CONTAIN ANY CAPS OF THE SAME DASH NO. IN A GIVEN KIT

	QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
	4 OZ.	MIL-S-8660		SILICONE COMPOUND	11
	19	1006369		"O" RING	10
	38	AN565DC4H3		SET SCREW	9
	1	2003899-011		I/L AND COVER ASSY	8
	4	MS35216-1		SCREW, PAN HD, CROSS RECESSED	7
SEE NOTE 4	1	1004260-20		NAMEPLATE	6
	38	2004944		SPRING, CAP RETAINING	5
SEE NOTE 5	19	1005022-001 THRU -019		CAP, ELECTRICAL ENGRAVED	4
	19	2004738-011		HOUSING ASSY (CAP)	3
	1	2004739		COVER, FRONT AGC DSKY	2
	1	0104126		RETROFIT INSTRUCTION BULLETIN	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

		DATE
DRAWN	G. J. Bison	2 NOV 67
CHECKED		6 NOV 67
APPROVED		8 Nov 67
APPROVED	W Stameris	8 Nov 67
APPROVED		11/16/67
APPROVED MSC		11/9/67

RETROFIT KIT LIST
FOR ECP
AGC DSKY ASSY

CODE IDENT NO.	SIZE	DRAWING NO.
80230	C	8104241

SCALE NONE

SHEET 1 OF 1

8104241 -1

TDRR 37180

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104252

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, AND MARKED IN ACCORDANCE WITH ND1002214
3. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY SHALL BE SERIALIZED PER ND1002023
4. FIND NO. 1 TO BE TESTED TO AND PASSED THE REQUIREMENTS OF PS 2016040.

SEE NOTE 4.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	MS35216-1	SCREW PAN HEAD CROSS RECESSED	9
1	0104136	RETROFIT INSTRUCTION BULLETIN	8
2 oz	1008953-004	SEALING COMPOUND	7
1	1004260-20	NAMEPLATE	6
2 oz	1008954	SILICONE COMPOUND	5
5 oz	1006879	SILICONE COMPOUND	4
6	MS16633-4014	RING, RETAINING	3
6	2004932-004	SCREW, JACKING	2
1	1005025-001	INDICATOR, STATUS / CAUTION	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN Tom Smith DATE 3 OCT 68
CHECKED E. Urban
APPROVAL Eldon C Hall 12/24/68
APPROVAL W Stameris 20 Dec 68
NASA APPROVAL
MIT APPROVAL 12-24-68

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST FOR ECP 739 INDICATOR, STATUS/CAUTION

CODE IDENT NO.	SIZE	NASA DRAWING NO.
80230	C	8104252

SCALE NONE WT SHEET 1 OF 1

8104252

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104253

REVISIONS TDRR 37315

SYM	DESCRIPTION	DATE	APPROVAL

8104253

1	0104137	RIB	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN Tom Smith DATE 6 NOV 68
CHECKED
APPROVAL Eldon C Hall 28 Jan 69
APPROVAL W Stameris/MIT 28 Jan 69
NAS 9-497
NASA APPROVAL
MIT APPROVAL 29 Jan '69

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST
LEM INSTALLATION KIT
ECP-0743

CODE IDENT NO. 80230
SIZE C
NASA DRAWING NO. 8104253
SCALE NONE
WT
SHEET 1 OF 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

8104254

REVISIONS TDRR 37322

SYM	DESCRIPTION	DATE	APPROVAL

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, AND MARKED IN ACCORDANCE WITH ND1002214
3. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY SHALL BE SERIALIZED PER ND1002023
4. *DESIGNATES APPROXIMATE QUANTITY
5. FOR FIND NO. 2 USE EITHER 2003988-011 OR -021

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
* 2 oz	1008953-003	SEALING COMPOUND	7
* 2 oz	1008954	SILICONE COMPOUND	6
* 5 oz	1006879	SILICONE COMPOUND	5
4	MS35216-1	SCREW, PAN HD, CROSS RECESSED	4
1	1004260-20	NAMEPLATE	3
1	SEE NOTE 5	E/L & COVER ASSEMBLY	2
1	0104138	RETROFIT INSTRUCTION BULLETIN	1

LIST OF MATERIALS

8104254

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN J.P. Leonard DATE 23 JAN 69
CHECKED E. Urban 24 JAN 69
APPROVAL Eldon C Hall 28 Jan 69
APPROVAL W Stameris 28 Jan 69
NASA APPROVAL
MIT APPROVAL 28 Jan 69

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST FOR ECP 0768
DSKY

CODE IDENT NO. 80230
SIZE C
NASA DRAWING NO. 8104254
SCALE NONE
WT
SHEET 1 OF 1

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 37598

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

NOTES:

1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. PREPARATION FOR DELIVERY: RETROFIT KIT ASSEMBLY SHALL BE PRESERVED, PACKAGED, AND MARKED IN ACCORDANCE WITH ND1002214
3. IDENTIFICATION: EACH RETROFIT KIT ASSEMBLY SHALL BE SERIALIZED PER ND1002023
4. ✱ DESIGNATES APPROXIMATE QUANTITY

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
REF	0104138		R. I. B.	
✱ 2 oz	1006338 - 002		SEALING COMPOUND, SILICONE	7
1	2004745 - 002		PANEL INDICATOR (E/L)	6
6	MS16633 – 4014		RING, RETAINING	5
12	NAS 620C6		WASHER, FLAT	4
12	1004546 – 4		WASHER, FLAT	3
6	2004932 – 004		SCREW, JACKING	2
1	2004699-001	—	FRAME, INDICATOR COVER	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

		DATE
DRAWN	Dick Clinton	24 APR 69
CHECKED	E. Udro	24 APR 69
APPROVED	F. L. Rabein	25 April 69
APPROVED	Eldon C Hall W Stameris	2 May 69 2 May 69
APPROVED MIT	M G Murley	2 May 69
APPROVED MSC		

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RETROFIT KIT LIST FOR E/L FOR ECP

CODE IDENT NO. 80230
SIZE C
DRAWING NO. 8104255
SCALE NONE
SHEET 1 OF 1

MODERN BLUE PRINT CO., INC. 02840

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		

ITEM NO.	DESCRIPTION OF CH'G	EFF. NO. S/N	RIS NO.	AUTHORIZATION ECF NO. OR SCN REF	DRAWING NUMBERS P/N MODIF	REF NO.	NEW P/N	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1THRU3	0106001	TDRR 20035	1017382	8106002	1017382-011	X					
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1THRU3	0106005	TDRR 20913	1017383	8106006	1017383-011		X				
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1THRU5	0106002	TDRR 20537	1017387	8106003	1017387-011			X			
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1AND2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X		
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1AND2	0106006	TDRR 21726	1016949	8106008	1016949-011					X	
6	TO PROVIDE TESTING OF OUA SCT	1THRU9	0106004	TDRR 23307	1019837	8106005	1019837-011						X

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

MASTER

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED B. LIUOI 8-4-65
APPROVAL [illegible] 9-1-61
APPROVAL
NOT REQUIRED PER LETTER
~~NASA PP05 612~~
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

AD-1360

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C₁		REPLACES REV"B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
D		TDRR 24750	11/19/65	WK

ITEM NO.	DESCRIPTION OF CH'G	EFF NO. S/N	RIB NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	DRAWING NUMBERS RFK NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.			
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X								
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	TDRR 20913	1017383	8106006	1017383-011		X							
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	TDRR 20537	1017387	8106003	1017387-011			X						
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X					
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X				
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X			

MASTER

Ⓒ1 REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 01386910070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED B. LIUOI 8-4-65
APPROVAL 9/1/65
APPROVAL
NOT REQUIRED PER LETTER
~~NASA PP7-65-612~~
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT
CALC ACTUAL
SHEET 1 OF 1

8106001

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
REVISIONS				
C1		REPLACES REV B WITH CHANGE PER ECO 114363 TDRR 23308 DATE [illegible]		
D		TDRR 24755	12/14/	wk
E1		REVISED PER ECO 115110 TORR NO. 25631 DATE 1/25/66	RC 2/2/66	NM 2 3 66

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	RIB NO. CLEC	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	R-K NO.	NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	S/H SIM CERT FIXTURE		
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20037 (ECP 0194)	1017382	8106002	1017382-011	X								
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	TDRR 20913	1017383	8106006	1017383-011		X							
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	TDRR 20537	1017387	8106003	1017387-011			X						
4	[illegible]	1 AND 2	0106003	TDRR 21697	10[illegible]910	[illegible]	10 630-011				X					
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X				
6	TO PROVIDE TESTING [illegible]	[illegible] 9	0106004	TDRR 22307	10[illegible]37	[illegible]	1019837-01						X			
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	[illegible]	1019970-011	8106028	1019970-021							X		

(E1)

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1020020	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 01386910070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8 4 65
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT
CALC ACTUAL
SHEET 1 OF 1

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
REVISIONS				
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
(M) D		TDRR 24750	11/4/65	
(M) E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	2/3/66
F1		REVISED PER ECO 115180 TDRF NO. 25643 DATE 1/25/66	JPD 3/8/66	E.J. 3/9/66

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	RIB NO. CREF.	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	RFK NO.	NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	S/H SIM CERT FIXTURE	FUNCTIONAL TESTER.		
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X									
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	TDRR 20913	1017383	8106006	1017383-011		X								
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	TDRR 20537	1017387	8106003	1017387-011			X							
4	CHANGE TO KOLLMORGEN COLL AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X						
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X					
6	TO PROVIDE TESTING OF QUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X				
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	PARA 5.4 SOW	1019970-011	8106028	1019970-021							X			(E1)
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAW" POSITION AND BARE WIRE TO "TACH SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER	1 THRU 3	0106018	TDRR	1016949-011	8106031	1016949-021								X		(F1)

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T.LOMNITZ DATE 8-4-65
CHECKED D. LIUOI 8-4-65
APPROVAL 9-1-65
APPROVAL
NOT REQUIRED PER LETTER
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE MASTER RETROFIT KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	RIB NO. (CAEA)	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	RFK NO.	NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	Ⓔ1 Ⓕ1 S/H SIM CERT FIXTURE	FUNCTIONAL TESTER		Ⓖ1 OPTICS NAV BASE SHIPPING CONTAINER
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X									
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	TDRR 20913	1017383	8106006	1017383-011		X								
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	TDRR 20537	1017387	8106003	1017387-011			X							
4	CHANGE TO KOLLMORGEN COLL AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X						
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X					
6	TO PROVIDE TESTING OF QUA SET	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X				
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	PARA 5.4 SOW	1019970-011	8106028	1019970-021							X			
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS. ADD "PAVM" POSITION AND BARE WIRE TO "TACH SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER	1 THRU 3	0106018	TDRR	1016949-011	8106031	1016949-021								X		
10	ADDED SHOCK RECORDER: ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV B WITH CHANGE PER ECO 114363 TDRR 23308 DATE		
D		TDRR 24750	12/4/66	
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	
F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/8/66	3/9/66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	JJP 3/15/66

Ⓒ1 REPLACES REV. B WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± ~	± ~	± ~

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070

DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8-4-65
APPROVAL 9-10-
APPROVAL
NOT REQUIRED PER LETTER
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

AD-1380

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	R.B. NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	RFK NO.	NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER		(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1THRU3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X										
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1THRU3	0106005	TDRR 20913	1017383	8106006	1017383-011		X									
3	TO PROVIDE FOR CERTAIN VERTICAL POSITION ONLY	1THRU5	0106002	TDRR 20537	1017387	8106003	1017387-011			X								
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1AND2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X							
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1AND2	0106006	TDRR 21726	1016949	8106008	1016949-011					X						
6	TO PROVIDE TESTING OF OUA SCT	1THRU9	0106004	TDRR 23307	1019837	8106005	1019837-011						X					
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1THRU6	0106009	PARA 5.4 SOW	1019970-011	8106028	1019970-021							X				
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	TDRR	1016949-011	8106031	1016949-021								X			
10	ADDED SHOCK RECORDER: ADDED MOUNTING FOR NEW HEATED EYEPIECES	1THRU8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X	
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
D		TDRR 24750	12/14/65	
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	2/2/66
F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/8/66	3/9/66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AWP 3-15-66	3/15/66
H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	3-21-66	BJR 3/23/66

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8 4 65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
NASA PP 65-612
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT
CALC ACTUAL
SHEET 1 OF 1

ITEM NO.	DESCRIPTION OF CH'G	EFF NO. S/N	PIR NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	DRAWING NUMBERS R+K NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER		(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X										
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	TDRR 20913	1017383	8106006	1017383-011		X									
3	TO PROVIDE FOR CERT IN VERTICAL POSITION ONLY	1 THRU 5	0106002	TDRR 20537	1017387	8106003	1017387-011			X								
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X							
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X						
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X					
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	PARA 5.4 SOW	1019970-011	8106028	1019970-021							X				
8	ADD TEST PROCEDURE TO MOTOR DR. AMPLS, ADD "FAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X			
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X	
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
(M) D		TDRR 24750	[illegible]	[illegible]
(M) E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	[illegible]	[illegible]
F1		REVISED PER ECO 115 30 TDRR NO. 25643 DATE 25/66	3/8/66	166
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	A.P. 3-15-66	[illegible]
(M) H1		REVISED PER ECO 109 8 TDRR G 27291 DATE 2 -66	3- -66	3/ 3/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26 66	4- -66	5/ /66

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED R. LIVO 8 4 65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
~~NASA APPROVAL 65 612~~
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT
CALC ACTUAL
SHEET 1 OF 1

(E1) (F1) (K1) (G1) (H1)

ITEM NO.	DESCRIPTION OF CHG	EFF. NO. S/N	RIB NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	DRAWING NUMBERS RFK NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY	S/H SIM CERT FIXTURE	FUNCT ONAL TESTER	FUNCTIONAL TESTER	OPTICS NAV BASE SHIPPING CONTAINER	LEM SHIPPING CONTAINER
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X										
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	TDRR 20913	1017383	8106006	1017383-011		X									
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	TDRR 20537	1017387	8106003	1017387-011			X								
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X							
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X						
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X					
7	~~REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF~~	1 THRU 6	0106009	PARA 5.4 SOW	1019970-011	8106028	1019970-021							X				
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X			
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X		
10	ADDED SHOCK RECORDER: ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X	
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	D106023	TDRR	6014000	8106037	6014000-011											X

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
D		TDRR 24750	11/4/65	
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RG 2/2/66	3/3/66
F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/10/66	3/19/66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	3/15/66
H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	3-21-66	3/23/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	5/4/66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	TRO 5/10/66	5/

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

1000000		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~ DO NOT SCALE THIS DRAWING	KOLLSMAN INSTRUMENT CORPORATION ELMHURST NEW YORK KIC PN 0138691 0070	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	MATERIAL —	DRAWN T. LOMNITZ DATE 8-4-65 CHECKED D. LIUOI 8-4-65 APPROVAL 9-1-61 APPROVAL	TITLE MASTER RETROFIT KIT LIST (KIC-GSE)
APPLICATION		CONTRACT NAS 9-497	NOT REQUIRED PER LETTER MIT APPROVAL	CODE IDENT NO. 89944 SIZE D NASA NUMBER 8106001 SCALE ~ WEIGHT CALC ACTUAL SHEET 1 OF 1

ITEM NO.	DESCRIPTION OF CH'G	EFF NO. S/N	RIB NO.	AUTHORIZATION	DRAWING NUMBERS P/N MOD REF	DRAWING NUMBERS RTK NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER	(K1) FUNCTIONAL TESTER	(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X											
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011		X										(L1)
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	ECP 192	1017387	8106003	1017387-011			X									(L2)
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X								
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X							
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X						
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021							X					(L3)
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X				
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X			
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X		
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X	

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
(M) D		TDRR 24750	1/14/	wk
(M) E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RG 2/2/66	2/3/66
F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JFD 3/8/66	3/ /66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	3/ /66
(M) H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	3-21-66	BJR 3/23/66
(M) J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	5/2/66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	RO 5/20/66	BJR 5/20/66
L1		REVISED PER ECO 117151 TDRR G28807 DATE 5/13/66	5/20/66	BJR 5/23/66

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED B. LIVOI 8-1-65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
~~NASA APPROVAL~~
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

(E1) (F1) (K1) (G1) (H1)

ITEM NO.	DESCRIPTION OF CH'G	EFF NO. S/N	RIB NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	R-K NO.	NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	S/H SIM CERT FIXTURE	FUNCTIONAL TESTER	FUNCTIONAL TESTER	OPTICS NAV BASE SHIPPING CONTAINER	LEM SHIPPING CONTAINER	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X											
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011		X										(L1)
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 3	0106002	ECP 192	1017387	8106003	1017387-011			X									(L2)
4	[illegible] AND ADDED PARTS	1 AND 2	0106003	TDRR 21697	1016910	8106007	1016910-011				X								
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X							
6	TO PROVIDE [illegible] TESTING OF CUA SET	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X						
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021							X					(L3)
8	ADD TEST PROCEDURE TO MOTOR DR. AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X				
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X			
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X		
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X	
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 13	0106036	ECP 404	1019720-011	8106038	1019720-021										X		(M1)

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
D		TDRR 24750		
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RG 2/2/66	2-3-66
F1		REVISED PER ECO 115130 TDRR NO. 25643 DATE 1/25/66	JFD 3/8/66	3/ /66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/22/66	AJP 3-15-66	3/ /66
H1		REVISED PER ECO 109098 TDRR G 27291 DATE 2/16/66	JM 3-21-66	BLR 3/23/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JOD 4-29-66	5/2/66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/1/66	5/10/66	BLR 5/12/66
L1		REVISED PER ECO 1171 TDRR G28807 DATE 5/13/66	5/20/66	5/ /66
M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE	FP	BLR 7-11-66

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000050	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0C70
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8-4-65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

ITEM NO.	DESCRIPTION OF CHG	EFF. NO. S/N	RIB NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	RFK NO.	NEW P/N (REF)	AZIMUTH REF FIX.	(N1) G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER	(K1) FUNCTIONAL TESTER	(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X											
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011		X										(L1)
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	ECP 192	1017387	8106003	1017387-011			X									(L2)
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X								
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106036	TDRR 21726	1016949	8106008	1016949-011					X							
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X						
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021							X					(L3)
8	ADD TEST PROCEDURE TO MOTOR DR. AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X				
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X			
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X		
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X	
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 13	0106036	ECP 404	1019720-011	8106038	1019720-021										X		(M1)
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECPS, 426, 427 428 CCA 497-0309	1017383-011	8102262	1017383-021		X										

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
D		TDRR 24750	11-4-65	wk
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RG 2/2/66	2/3/66
F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/8/66	3/9/66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	3/1/66
H1		REVISED PER ECO 109628 TDRR G 27291 DATE 2-16-66	3-21-66	BJR 3/23/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	5/2/66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/1/66	5/10/66	BJR 5/12/66
L1		REVISED PER ECO 117151 TDRR G29807 DATE 5/12/66	PC 5/12/66	BJR
M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/5/66	FP 7/7/66	BJR 7-11-66
N1		REVISED PER ECO 117135 TDRR G 31478 DATE 10/6/66	10/20/66 JPD	10-27-66

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8-4-65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 810 001
SCALE ~
WEIGHT
CALC ACTUAL
SHEET OF 1

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	R.B. NO.	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	DRAWING NUMBERS RFK NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX. (N1)	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	S/H SIM CERT FIXTURE (E1)	FUNCTIONAL TESTER (F1) (K1)	FUNCTIONAL TESTER	OPTICS NAV BASE SHIPPING CONTAINER (G1)	LEM SHIPPING CONTAINER (H1)	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X											
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011		X										(L1)
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	ECP 192	1017387	8106003	1017387-011			X									(L2)
4	CHANGE TO KOLLMORGEN COLL AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X								
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X							
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X						
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021							X					(L3)
8	ADD TEST PROCEDURE TO MOTOR DR. AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X				
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X			
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X		
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X	
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 13	0106036	ECP 404	1019720-011	8106038	1019720-021										X		(M1)
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECP'S, 426, 427 428 CCA 497-0309.	1017383-011	8102262	1017383-021		X										
14	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	1 THRU 4	0106038	ECP-458	1019837-000	8106050	1019837-031						X						
15	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	5 THRU 9	0106037	ECP-458	1019837-011	8106049	1019837-021						X						(P1)

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
D		TDRR 24750	1-4-66	wk.
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	2/3/66
F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JFD 3/8/66	[illegible]
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	P 3/ /66
H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	JM 3-21-66	BJR 3/23/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JFD 4-29-66	P 5/2/66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	TRO 5/20/66	BJR 5/2/66
L1		REVISED PER ECO 117151 TDRR G28807 DATE 5/13/66	PC 5/20/66	BJR 5/23/66
M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/5/66	FP 7/7/66	BJR 7-11-66
N1		REVISED PER ECO 117135 TDRR G31478 DATE 10/6/66	10/20/66 JFD	10-25-66
P1		REVISED PER ECO 117094 TDRR G3198. DATE 11-4-66	11-21-66 JFD	P 11-22-66

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1020020	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± ~	± ~	± ~

DO NOT SCALE THIS DRAWING

MATERIAL ——

CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK

KIC PN 013869100070

DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8-4-65
APPROVAL
APPROVAL

NOT REQUIRED PER LETTER
~~NASA APPROVAL~~
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT KIT LIST (KIC-GSE)

CODE IDENT NO.	SIZE	NASA NUMBER
89944	D	8106001

SCALE ~ | WEIGHT CALC ACTUAL | SHEET 1 OF 1

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	P.3 NO.	AUTHORIZATION	DRAWING NUMBERS P/N MOD. (REF)	DRAWING NUMBERS RFK NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	(N1) G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER	(K1) FUNCTIONAL TESTER	(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X											
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011		X										(L1)
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	ECP 192	1017387	8106003	1017387-011			X									(L2)
4	CHANGE TO KOLLMORGEN CO. AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X								
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X							
6	TO [illegible] TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X						
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021							X					(L3)
8	ADD TEST PROCEDURE TO MOTOR DR. AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X				
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X			
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X		
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X	
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 13	0106036	ECP 404	1019720-011	8106038	1019720-021										X		(M1)
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECP'S, 426, 427 428 CCA 497-0309.	1017383-011	8102262	1017383-021		X										
14	PROVIDED NEW ADAPTER FOR SXT EYEPIECE USED WITH THERMAL INSULATION	1 THRU 4	0106038	ECP-458	1019837-000	8106050	1019837-031						X						
1	PROVIDED NEW ADAPTER FOR SXT EYEPIECE USED WITH THERMAL INSULATION	5 THRU 9	0106037	ECP-458	1019837-011	8106049	1019837-021						X						(P1)

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV B WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
D		TDRR 24750	1-14-66	
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	2/3/66
F1		REVISED PER ECC 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/8/66	3/ /66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	P 3/ /66
H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	JM 3-21-66	BJR 3/23/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	P 5/2/66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	TRJ 5/20/66	BJR 5/ /66
L1		REVISED PER ECO 117151 TDRR G28807 DATE 5/13/66	PE 5/20/66	5/ /66
M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/5/66	FP 7/7/66	BJR 7-11-66
N1		REVISED PER ECO 117135 TDRR G3478 DATE 10/6/66	10/20/66 JPD	10-25-66
P1		REVISED PER ECO 117094 TDRR G3981 DATE 11-4-66	11-21-66 JPD	P 11-22-66

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1020002	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± ~	± ~	± ~

DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8-4-65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	RIB NO.	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	DRAWING NUMBERS RFK NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	(N1) G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER	(K1) FUNCTIONAL TESTER	(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER	(R1) OPTICS CLEANER KIT	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0194)	1017382	8106002	1017382-011	X												
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011		X											(L1)
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	ECP 192	1017387	8106003	1017387-011			X										(L2)
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011				X									
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	TDRR 21726	1016949	8106008	1016949-011					X								
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011						X							
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021							X						(L3)
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X					
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X				
10	ADDED SHOCK RECORDER: ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011										X			
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011											X		
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 13	0106036	ECP 404	1019720-011	8106047	1019720-021										X			(M1)
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECP'S, 426, 427 428 CCA 497-0309	1017383-011	8102262	1017383-021		X											
14	PROVIDED NEW ADAPTER FOR SXT EYEPIECE USED WITH THERMAL INSULATION	1 THRU 4	0106038	ECP-458	1019837-000	8106050	1019837-031						X							
15	PROVIDED NEW ADAPTER FOR SXT EYEPIECE USED WITH THERMAL INSULATION	5 THRU 9	0106037	ECP-458	1019837-011	8106049	1019837-021						X							(P1)
16	PROVIDE MEANS TO PURGE AOT COUNTER WITH DRY NITROGEN	1 THRU 8	0106045	ECP-543	1019984-011	8106057	1019984-021												X	

REVISIONS

	SYM	ZONE	DESCRIPTION	DATE	APPROVAL
	C.		REPLACES REV 'B' WITH CHANGE PER ECO 114363 TDRR 23308 DATE 2-19-65		
	D		TDRR 24750	1-11-66	WK
(H)	E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	TRG 2/2/66	NM 2/?/66
	F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 2/25/66	JPD 3/8/66	E.J. 3/9/66
	G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/26/66	AJP 3-15-66	3/1?/66
(M)	H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	JM 3-2-66	BJR 3/23/66
(M)	J1		REVISED PER ECO 102875 TDRR G28266 DATE 4-26-66	JPD 4-29-66	5/2/66
	K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	TEJ 5/?/66	BJR 5/20/66
(M)	L1		REVISED PER ECO 117151 TDRR G28807 DATE 5/13/66	PE 5/20/66	BJR 5/23/66
(M)	M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/8/66	F.F. 7/7/66	BJR 7-11-66
(M)	N1		REVISED PER ECO 117135 TDRR G31478 DATE 10/6/66	10/?/66 JPD	10-25-66
(M)	P1		REVISED PER ECO 117094 TDRR G31981 DATE 11-4-66	11-21-66 JPD	11-22-66
	R1		REVISED PER ECO 116244 TDRR G34286 DATE 8/4/67	FP 8/21/67	9/2/67

(C1) REPLACES REV. 'B' WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1020003	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138691 0070
DRAWN T. LOMNITZ DATE 2-4-65
CHECKED
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

MASTER

ITEM NO	DESCRIPTION OF CHG	EFF ON S/N	P.S NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	KFK NO.	NEW P/N (REF)
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106001	TDRR 20035 (ECP 0199)	1017382	8106002	1017382-011
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 5	0106005	ECP 193	1017383	8106006	1017383-011
3	TO PROVIDE FOR SEC [illegible] N VERTICAL POSITION ONLY	1 THRU 5	0106002	ECP 132	1017387	8106003	1017387-011
4	CHANGE TO KOLLMORGEN COLL AND ADDED APTF	1 AND 2	0106003	TDRR 21697	1016910	8106004 8106007	1016910-011
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106036	TDRR 21726	1016949	8106008	1016949-011
6	TO PROVIDE TESTING OF OUA SCT	1 THRU 9	0106004	TDRR 23307	1019837	8106005	1019837-011
7	REVISED CONFIGURATION OF ELECTRICAL DOWN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 ECP-86R	1019720	8106034	1019720-011
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	TDRR	6014000	8106037	6014000-011
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 13	0106036	ECP 404	1019720-011	8106047	1019720-021
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECPS, 426, 427 428 CCA 497-0309	1017383-011	8102262	1017383-021
14	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	1 THRU 4	0106038	ECP-458	1019837-000	8106050	1019837-031
15	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	5 THRU 9	0106037	ECP-458	1019837-011	8106049	1019837-021
16	PROVIDE MEANS TO PURGE AOT COUNTER WITH DRY NITROGEN	1 THRU 8	0106045	ECP-543	1019984-011	8106057	1019984-021
17	PROVIDE MEANS TO DIM RETICLE AND COUNTER LAMPS	1 AND 2	0106046	ECP-543	6014003-011	8106059	6014003-021

ITEM NO	AZIMUTH REF FIX.	(N1) G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER	(K1) FUNCTIONAL TESTER	(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER	(R1) OPTICS CLEANER KIT	(S1) AOT TESTER ASSY	
1	X													
2		X												(L1)
3			X											(L2)
4				X										
5					X									
6						X								
7							X							(L3)
8								X						
9									X					
10										X				
11											X			
12										X				(M1)
13		X												
14						X								(P1)
15						X								
16												X		
17													X	

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV B WITH CHANGE PER ECO 114363 TDRR 23308 DATE 0-1-65		
D		TDRR 24750	1-4-66	WK
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	2/3/66
F1		REVISED PER ECC 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/8/66	/66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	A.P 3-15-66	P 3/
H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	gm 3-21-66	3/23/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	P 5/ /66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	5/10/66	/66
L1		REVISED PER ECO 117151 TDRR G28807 DATE 5/13/66	PE 5/24/66	/66
M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/5/66	FP 7/7/66	7 11-66
N1		REVISED PER ECO 117135 TDRR G 31478 DATE 10/6/66	10/20/66 JPD	10- -66
P1		REVISED PER ECO 117094 TDRR G31981 DATE 11-4-66	11-21-66 JPD	-66
R1		REVISED PER ECO 116244 TDRR G34286 DATE 8/4/67	FP 8/21/67	P 8 /67
S1		REVISED PER ECO 113447 TDRR G34777 DATE 10/2/67	J.J.T 10/18/67	P 10/ /67

(C1) REPLACES REV. 'B' WITH CHANGE

ITEM NO	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1020000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138631 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED 8-4
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER
~~NASA APPROVAL~~
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 81C6001
SCALE ~
WEIGHT
CALC ACTUAL
SHEET 1 OF 1

MASTER

AC-1380

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	RIB NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	RFK NO.	NEW P/N (REF)
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1	0106001	ECP 0194	1017382	8106002	1017382-011
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 5	0106002	ECP 192	1017387	8106003	1017387-011
4	CHANGE TO KOLLMORGEN COLL. AND ADDED APTF	1 AND 2	0106003	SA-42	1016910	8106004 8106007	1016910-011
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	SA-42	1016949	8106008	1016949-011
6	TO PROVIDE TESTING OF OUA SCT	5 THRU 9	0106004	ECP 172	1019837	8106005	1019837-011
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 SA-42	1019720	8106034	1019720-011
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	ECP 75	6014000	8106037	6014000-011
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 8	0106036	ECP 404	1019720-011	8106047	1019720-021
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECPS, 426, 427 428	1017383-011	8102262	1017383-021
14	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	1 THRU 4	0106038	ECP-458	1019837-000	8106050	1019837-031
15	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	5 THRU 9	0106037	ECP-458	1019837-011	8106049	1019837-021
16	PROVIDE MEANS TO PURGE AOT COUNTER WITH DRY NITROGEN	1 THRU 8	0106045	ECP-543	1019984-011	8106057	1019984-021
17	PROVIDE MEANS TO DIM RETICLE AND COUNTER LAMPS	1 AND 2	0106046	ECP-543	6014003-011	8106059	6014003-021

ITEM NO.	AZIMUTH REF FIX.	(N1) G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	(E1) S/H SIM CERT FIXTURE	(F1) FUNCTIONAL TESTER	(K1) FUNCTIONAL TESTER	(G1) OPTICS NAV BASE SHIPPING CONTAINER	(H1) LEM SHIPPING CONTAINER	(R1) OPTICS CLEANER KIT	(S1) AOT TESTER ASSY	
1	X													
2		X												(L1)
3			X											(L2)
4				X										
5					X									
6						X								
7							X							(L3)
8								X						
9									X					
10										X				
11											X			
12										X				(M1)
13		X												
14						X								(P1)
15						X								
16												X		
17													X	

REVISIONS

	SYM	ZONE	DESCRIPTION	DATE	APPROVAL
	C1		REPLACES REV "B" WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
(E)	D		TDRR 24750	11/14/65	WK
(H)	E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	[illegible]
	F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/8/66	E.J. 3/7/66
	G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	J.J.P 3/1/66
(M)	H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	JM 3-21-66	BJR 3/23/66
(M)	J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	J.J.P 5/2/66
	K1		REVISED PER ECO 116120 TDRR G28000 DATE [illegible]	RO [illegible]	[illegible]
(M)	L1		REVISED PER ECO 117151 TDRR G28807 DATE [illegible]	RS [illegible]	[illegible]
(M)	M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/5/66	FP 7/7/66	BJR 7-11-66
(M)	N1		REVISED PER ECO 117135 TDRR G 31478 DATE 10/6/66	10/24/66 JPD	T.J.T. 10-25-66
(M)	P1		REVISED PER ECO 117094 TDRR G31981 DATE 11-4-66	11-21-66 JPD	J.J.P 11-22-66
(M)	R1		REVISED PER ECO 116244 TDRR G34286 DATE 8/4/67	JP 8/21/67	J.J.P 8/2/67
(M)	S1		REVISED PER ECO 113447 TDRR G34777 DATE 10/2/67	J.J.T 10/18/67	E.S.P. 10/20/67
	T		REVISED PER TDRR 35801	11 MAR 68	JRK

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1030000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 0138631 0070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED [illegible] 8-4-65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER ~~NASA PP 65-612~~
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944 SIZE D NASA NUMBER 8106001
SCALE ~ WEIGHT CALC ACTUAL SHEET 1 OF 1

8106001

REVISIONS

	SYM	ZONE	DESCRIPTION	DATE	APPROVAL
	C1		REPLACES REV B WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-19-65		
E	D		TDRR 24750	11/4/[illegible]	[illegible]
(M)	E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	[illegible] 2/3/66
	F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/8/66	[illegible] 3/9/66
	G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	[illegible] 3/1-/66
(M)	H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	[illegible] 3-21-66	BJR 3/23/66
(M)	J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	[illegible] 5/2/66
	K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	TEO 5/10/66	BJR 5/20/66
(M)	L1		REVISED PER ECO 117151 TDRR G28807 DATE 5/13/66	RG 5/24/66	[illegible] [illegible]/66
(M)	M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/8/66	FP 7/7/66	PAR 7-11-66
(M)	N1		REVISED PER ECO 117135 TDRR G 31478 DATE 10/6/66	10/24/66 JPD	[illegible]
(M)	P1		REVISED PER ECO 117094 TDRR G31981 DATE 11-4-66	11-21-66 JPD	[illegible] 11-22-66
(M)	R1		REVISED PER ECO 116244 TDRR G34286 DATE 8/4/67	[illegible] 8/21/67	[illegible] 8/2[illegible]/67
(M)	S1		REVISED PER ECO 113447 TDRR G 34177 DATE 10/2/67	J.J.T 10/[illegible]/67	[illegible] [illegible]/67
(A1)	T		REVISED PER TDRR 35801	[illegible]	JRK [illegible]
	U		REVISED PER TDRR 36138	[illegible] 68	[illegible] ROWH

ITEM NO.	DESCRIPTION OF CHG	EFF NO. S/N	RIB NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	RFK NO.	NEW P/N (REF)	AZIMUTH REF FIX.	G&N INSTALLATION FIX. (N1)	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	PORTABLE LIGHT ASSY.	S/H SIM CERT FIXTURE (E1)	FUNKTIONAL TESTER (F1)	FUNCTIONAL TESTER (K1)	OPTICS NAV BASE SHIPPING CONTAINER (G1)	LEM SHIPPING CONTAINER (H1)	OPTICS CLEANER KIT	AOT TESTER ASSY (R1)	SHAFT ACCURACY TESTER (S1)	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1	0106001	ECP 0194	1017382	8106002	1017382-011	X														
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1THRU3	0106005	ECP 193	1017383	8106006	1017383-011		X													(L1)
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1THRU5	0106002	ECP 192	1017387	8106003	1017387-011			X												(L2)
4	CHANGE TO KOLLMORGEN CELL AND ADDED AFTF	1AND2	0106003	SA-42	1016910	[illegible] 8106007	1016910-011				X											
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1AND2	0106006	SA-42	1016949	8106008	1016949-011					X										
6	TO PROVIDE TESTING OF OUA SCT	5THRU9	0106004	ECP 172	1019837	8106005	1019837-011						X									
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1THRU6	0106009	ECP 214	1019970-011	8106028	1019970-021							X								(L3)
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	(J1) ECP 345	1016949-011	8106031	1016949-021								X							
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106029	ECP149	1016949-021	8106035	1016949-031									X						
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1THRU8	0106019 0106020	ECP-75 SA-42	1019720	8106034	1019720-011										X					
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	ECP 75	6014000	8106037	6014000-011											X				
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 8	0106036	ECP404	1019720-011	8106047	1019720-021										X					(M1)
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECP'S, 426, 427 428	1017383-011	8102262	1017383-021		X													
14	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	1 THRU 4	0106038	ECP-458	1019837-000	8106050	1019837-031						X									
15	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	5 THRU 9	0106037	ECP-458	1019837-011	8106049	1019837-021						X									(P1)
16	PROVIDE MEANS TO PURGE AOT COUNTER WITH DRY NITROGEN	1THRU8	0106045	ECP-543	1019984-011	8106057	1019984-021												X			
17	PROVIDE MEANS TO DIM RETICLE AND COUNTER LAMPS	1 AND 2	0106046	ECP-543	6014003-011	8106059	6014003-021													X		
18	TO CONVERT THREE (3) INTERIM UNITS TO GSE	1 THRU 3	0106007	ECP 292R	01386900017	8106023	1019769														X	

(C1) REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 01386910070
DRAWN T.LOMNITZ DATE 8-4-65
CHECKED [illegible] 8-4-[illegible]
APPROVAL [illegible]
APPROVAL
NOT REQUIRED PER LETTER
~~[illegible]~~
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

AD-1000

8106001

ITEM NO.	DESCRIPTION OF CH'G	EFF. NO. S/N	RIB NO. (REF)	AUTHORIZATION	DRAWING NUMBERS P/N MOD (REF)	DRAWING NUMBERS RFK NO.	DRAWING NUMBERS NEW P/N (REF)	AZIMUTH REF FIX.	Ⓝ1 G&N INSTALLATION FIX.	ALIGNMENT CERT FIX.	PRECISION TEST FIX.	FUNCTIONAL TESTER	~~PORTABLE LIGHT ASSY.~~	Ⓔ1 S/H SIM CERT FIXTURE	Ⓕ1 FUNCTIONAL TESTER	Ⓚ1 FUNCTIONAL TESTER	Ⓖ1 OPTICS NAV BASE SHIPPING CONTAINER	Ⓗ1 LEM SHIPPING CONTAINER	Ⓡ1 OPTICS CLEANER KIT	Ⓢ1 AOT TESTER ASSY	SHAFT ACCURACY TESTER	AOT PROTECTIVE COVER	
1	REVISED AZIMUTH REFERENCE PRISM ASSY	1	0106001	ECP 0194	1017362	8106002	1017362-011	X															
2	REVISED AZIMUTH REFERENCE PRISM ASSY	1 THRU 3	0106005	ECP 193	1017383	8106006	1017383-011		X														Ⓛ1
3	TO PROVIDE FOR CERT. IN VERTICAL POSITION ONLY	1 THRU 3	0106002	ECP 192	1017387	8106003	1017387-011			X													Ⓛ2
4	CHANGE TO KOLLMORGEN CELL AND ADDED APTF	1 AND 2	0106003	SA-42	1016910	8106004 8106007	1016910-011				X												
5	PROVIDE BLOCK I AND II TEST CAPABILITIES	1 AND 2	0106006	SA-42	1016949	8106008	1016949-011					X											
6	TO PROVIDE TESTING OF OUA SCT	5 THRU 9	0106004	ECP 172	1019837	8106005	1019837-011						X										
7	REVISED CONFIGURATION OF ELECTRICAL CONN TO PREVENT WIRES FROM BREAKING OFF	1 THRU 6	0106009	ECP 214	1019970-011	8106028	1019970-021							X									Ⓛ3
8	ADD TEST PROCEDURE TO MOTOR DR AMPLS, ADD "PAVM" POSITION AND BARE WIRE TO "TACH. SEL" SWITCH. ADD 3 CABLES TO FUNCTIONAL TESTER.	1 THRU 3	0106018	Ⓙ1 ECP 345	1016949-011	8106031	1016949-021								X								
9	ADD CABLE TO FUNCTIONAL TESTER	1 THRU 3	0106024	ECP 149	1016949-021	8106035	1016949-031									X							
10	ADDED SHOCK RECORDER; ADDED MOUNTING FOR NEW HEATED EYEPIECES	1 THRU 8	0106019 0106020	ECP-75 SA-42	1019720	8106034	1019720-011										X						
11	ADDED SHOCK RECORDER TO LEM SHIPPING CONTAINER	1	0106023	ECP 75	6014000	8106037	6014000-011											X					
12	ADDED RETAINERS TO PREVENT SLIPPING OF THE SHOCK ISOLATORS FROM THE FRAME ASSY	1 THRU 8	0106036	ECP 404	1019720-011	8106047	1019720-021										X						Ⓜ1
13	REPOSITION OF AUTOMATIC OPTICAL LEVELS TO ACCOMMODATE OUA REDUCED FIELD OF VIEW	1 THRU 3	0102657	ECP'S, 426, 427 428	1017383-011	8102262	1017383-021		X														
14	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	1 THRU 4	0106038	ECP-458	1019837-000	8106050	1019837-031						X										Ⓟ1
15	PROVIDED NEW ADAPTER FOR SXT EYE-PIECE USED WITH THERMAL INSULATION	5 THRU 9	0106037	ECP-458	1019837-011	8106049	1019837-021						X										
16	PROVIDE MEANS TO PURGE AOT COUNTER WITH DRY NITROGEN	1 THRU 8	0106045	ECP-543	1019984-011	8106057	1019984-021												X				
17	PROVIDE MEANS TO DIM RETICLE AND COUNTER LAMPS	1 AND 2	0106046	ECP-543	6014003-011	8106059	6014003-021													X			
18	TO CONVERT THREE (3) INTERIM UNITS TO GSE	1 THRU 3	0106007	ECP 292R	01386900017	8106023	1019769														X		
19	CREATE AOT PROTECTIVE COVER ASSEMBLY	AOT 606 THRU 617	0106050	ECP 6057	—	8106088	6014329-011															X	

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
C1		REPLACES REV 'B' WITH CHANGE PER ECO 114363 TDRR 23308 DATE 10-11-65		
D		TDRR 24750		
E1		REVISED PER ECO 115110 TDRR NO. 25631 DATE 1/25/66	RC 2/2/66	2/3/66
F1		REVISED PER ECO 115180 TDRR NO. 25643 DATE 1/25/66	JPD 3/10/66	3/10/66
G1		REVISED PER ECO 116070 TDRR NO. 25760 DATE 1/28/66	AJP 3-15-66	JJP
H1		REVISED PER ECO 109698 TDRR G 27291 DATE 2-16-66	3-21-66	BJR 3/23/66
J1		REVISED PER ECO 102675 TDRR G28266 DATE 4-26-66	JPD 4-29-66	JJP 5/2/66
K1		REVISED PER ECO 116120 TDRR G28660 DATE 5/10/66	TRO 5/20/66	BJR 5/20/66
L1		REVISED PER ECO 117151 TDRR G28807 DATE 5/13/66	RC	BJR 5/23/66
M1		REVISED PER ECO 117110 TDRR NO. G30073 DATE 7/8/66	FP 7/7/66	BJR 7-11-66
N1		REVISED PER ECO 117135 TDRR G 31478 DATE 10/6/66	JPD	11-25-66
P1		REVISED PER ECO 117094 TDRR G31981 DATE 11-4-66	11-21-66 JPD	JJP 11-22-66
R1		REVISED PER ECO 116244 TDRR G34286 DATE 8/4/67	8/21/67	JJP 8/21/67
S1		REVISED PER ECO 113447 TDRR G34777 DATE 10/2/67	J.J.T	J.J.P. 10/26/67
T		REVISED PER TDRR 35801		JRK
U		REVISED PER TDRR 36138		RWH
V		REVISED PER TDRR 36426	28 JUN 68	JJJ

Ⓒ1 REPLACES REV. "B" WITH CHANGE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 013869100070
DRAWN T. LOMNITZ DATE 8-4-65
CHECKED C. LIUOI 8-4-65
APPROVAL
APPROVAL
NOT REQUIRED PER LETTER ~~MSM 99996 612~~
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT
KIT LIST (KIC-GSE)

CODE IDENT NO. 89944 SIZE D NASA NUMBER 8106001
SCALE ~ WEIGHT CALC ACTUAL SHEET 1 OF 1

8106001

AC-1000

6 | 5 | 4 | 3 | 2 | 1

REVISIONS TDRR ~~17864~~

SYM	ZONE	DESCRIPTION	DATE	APPROVAL

—DWGS NO. AND TITLES OF RETROFIT KITS—

PART NO.	DESCRIPTION
8106002	RETROFIT KIT DWG FOR AZIMUTH REF FIX.
	RETROFIT KIT ALIGNMENT CERTIF. FIX. (1017387-011)

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

	FRACTIONS	DECIMALS	ANGLES
TOL ON	± ~	± ~	± ~

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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 01386910070
DRAWN T. LOMUITZ DATE 6-3-65
CHECKED
APPROVAL L. MIRONOW 6-3-65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
MASTER RETROFIT KIT LIST (KIC-GSE)

CODE IDENT NO. 89944
SIZE C
NASA NUMBER 8106001
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

AD-1340

6 | 5 | 4 | 3 | 2 | 1 WA

REVISIONS TDRR 19864

SYM	ZONE	DESCRIPTION	DATE	APPROVAL

DWGS AFFECTED (NEW & REVISED)

DWG NO	DESCRIPTION	NEW PART NO
1017382	AZIMUTH REF FIXTURE	1017382-011
1019761	MOUNT ASSY (PORRO PRISM)	1019761-011
1022930	PORRO PRISM SUB-ASSY	
1019262	IDENTIFICATION PLATE	

MATERIAL REQUIRED

ITEM NO.	QTY REQ'D	PART NO.	DESCRIPTION
1	2	1019384-3	PIN, STRAIGHT HEADLESS-OVERSIZE
2	1	1022930	PORRO PRISM SUB-ASSY
3	1 PACK		LENS TISSUES
4	1 ROLL		ELECTRIC FRICTION TAPE
5	4 OZ		ISOPROPYL ALCOHOL
6	1		STAMP, METAL 1/8 HIGH (NUMBER "1")
7	1		STAMP, METAL 1/8 HIGH (NUMBER "0")
8	1		STAMP, METAL 1/8 WIDE (DASH –)

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
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MATERIAL ______
CONTRACT ______

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 02386910423
DRAWN T LOMNITZ DATE 6-3-65
CHECKED ______
APPROVAL L Messner 6-3-65
APPROVAL ______
NASA APPROVAL A.C. [illegible] 6/4/65
[illegible] 6-4-65
MIT APPROVAL W Kupfer 4 Jun 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR
AZIMUTH REFERENCE FIXTURE
(1017382-011)

CODE IDENT NO. 89944
SIZE C
NASA NUMBER 8106002
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

WA

REVISIONS 20544 6/28/65

SYM	ZONE	DESCRIPTION	DATE	APPROVAL

RETROFIT KIT

ITEM NO	QTY	PART NO.	DESCRIPTION
1	1	1017387-011	ALIGNMENT CERTIFICATION FIXTURE
2	1	1022831-011	THEODOLITE STAND ASSY
3	1	0106002	RETROFIT INSTRUCTION BULLETIN
4	1	JDC02839	AUTO-COLLIMATOR & TELESCOPE ZERO
5	1	JDC02840	TEST VERTICAL POSITION WITH THEODOLITE
6	1	1022953-011	AZIMUTH MONITOR MIRROR ASSY

(DWG'S AFFECTED NEW AND REVISED)

DWG NO.	DESCRIPTION	NEW DWG NO.
1017387	CERTIFICATION FIX., ALIGNMENT	
1017386	BASE, SUB ASSY	
1019012	BASE MACHINING	
1019164	PLATE, IDENTIFICATION	
1016951	MIRROR ASSY	
8106001	MASTER RETROFIT KIT LIST (KIC-GSE)	
JDC02839	AUTO-COLLIMATOR & TELESCOPE ZERO	
JDC02839	TEST-VERTICAL POSITION WITH THEODOLITE	
	RETROFIT KIT FOR ALIGNMENT CERTIFICATION FIXTURE	8106003
	AZIMUTH MONITOR MIRROR ASSY	1022953
	BUSHING	1022501
	WASHER	1022502
	ECCENTRIC	1022503
	PIVOT BLOCK	1022504
	PAD	1022507
	MIRROR MOUNT. AZIMUTH MONITOR	1022505
	PAD SUPPORT	1022506
	STAND, THEODOLITE (MACHINING)	1022238
	STAND, THEODOLITE (CASTING)	1022237
	THEODOLITE STAND ASSY	1022831
	STAND ASSY	1022833
	LEVELING STUD ASSY	1022834
	BUTTON	1022239
	STUD	1022240
	KNOB	1022241
1019009	CERTIFICATION BLOCK (MACH.)	

8106003

MASTER

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8106001	8106001

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN 02386910425
DRAWN K. Smith DATE 6-28-65
CHECKED [illegible] 6-28-65
APPROVAL [illegible] 6-28-65
APPROVAL
NASA APPROVAL [illegible] 6/28/65
MIT APPROVAL [illegible] 6-28-65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT FOR ALIGNMENT
CERTIFICATION FIXTURE (1017387-011)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106003
SCALE —
WEIGHT CALC ACTUAL
SHEET 1 OF 1

AD-1380

REVISIONS 22240				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

NEW MATERIAL REQUIRED

ITEM NO.	QTY REQ'D	PART NO.	DESCRIPTION
1	1	1013001	COVER AND BAFFLE ASSY
2	1	2012608	FOCUSING SHIM
3	2	NAS1352C02LL3	MOUNTING SCREWS
4	1	2012426	RETICLE ASSY
5	1	2012513	RING, LOCKING, OUTER
6	2	2012490	EYEPIECE MTG SCREWS
7	1	1012240	SHIM, AIR FOCUSING (SXT)
8	AS REQ'D	1013004	SHIM, RETICLE FOCUSING
9	1	0106008	RETROFIT INSTRUCTION BULL.
10	1	1012196	PLATE, IDENTIFICATION
11	2	1011768-4	PACKING, PREFORMED

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± ~	± ~	± ~

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CONTRACT —

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN DATE 8/24/65
CHECKED M Farrell 8/21/65
APPROVAL
APPROVAL 8/26/65
NASA APPROVAL 9/1/65
MIT APPROVAL 3 Sep 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR
OPTICAL UNIT ASSY SERIAL #10
(1011000-005)

CODE IDENT NO.
SIZE C
NASA NUMBER 8106012
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

6 5 4 3 2 1

REVISIONS 23359				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

NEW MATERIAL REQUIRED

ITEM NO.	QTY REQ'D	PART NO.	DESCRIPTION
1	1	0106011	RETROFIT INSTRUCTION BULLETIN
2	1	2012547-011	COVER & BAFFLE ASSEMBLY (SCT)
3	1	2012672	MOUNT, DOVE PRISM (MOD P/N 2011176)
4	1	2012675	COVER, SXT HEAD (MOD P/N 2011604)
5	1	2012676	COVER SCT HEAD (MOD P/N 2012545)
6	1	2012638	HOUSING STAR TRACKER & HORIZON SENSOR (MOD P/N 2012446)
7	1	2012671	TELESCOPE PANEL (MOD P/N 2011696)
8	1	1004260-300	OPTICAL UNIT NAME PLATE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

MASTER

NEXT ASSY	USED ON
8106025	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± ~	± ~	± ~

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT —

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN

DRAWN B. F. Ole. DATE 9-7-65
CHECKED
APPROVAL E. Rushmore 10/14/65
APPROVAL E. Thoruy 10/15/65
NASA APPROVAL W. Milach 10/21/65
MIT APPROVAL MG Wurle 10-21-65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR ECP160
OPTICAL UNIT ASSY SERIAL # 2
(2011000-001)

CODE IDENT NO.	SIZE	NASA NUMBER
	C	8106024

SCALE ~ WEIGHT CALC ACTUAL SHEET 1 OF 1

AD-1340

6 5 4 3 2 1

8106025 AA

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25495	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	MF
F		REVISED PER TDRR 34082	7/3/67	MF
G		REVISED PER TDRR 34379	8/18/67	MF
H		REVISED PER TDRR 34754	10/2/67	MF
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	14 AUG 68	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ
V		REVISION STATUS CHANGED	4 FEB 69	RWH
W		REVISION STATUS CHANGED	15 APR 69	JJJ
Y		REVISION STATUS CHANGED	5 JUN 69	JJJ
Z		REVISION STATUS CHANGED	13 NOV 69	
AA		REVISION STATUS CHANGED	25 NOV 69	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP	9 10 11	1011000-006 1011000-005 1011000-007	8106045-001	1011000-008 1011000-009 1011000-010	OPTICAL UNIT ASSEMBLY
				121 109 111 122 SP 123 201A 201 1-201 202 203 204	2 5 6 7 8 9 011 012 014 013 015 016	2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-002	2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A 1-201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES

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KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN G. Fuller DATE 10/7/65
CHECKED A. E. SCHOLZ 10/15/65
APPROVAL 10/21/65
APPROVAL
NASA APPROVAL 10/4/
MIT APPROVAL

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SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.	SIZE	NASA NUMBER
80230	D	8106025

SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 3

8106025 AA

AA 8106025

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD.
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	MTY
K	·	REVISED PER TDRR 35755	—	28 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	TK
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	JJJ
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
R		REVISION STATUS CHANGED		14 AUG 68	TK
S		REVISED PER TDRR 36984		7 NOV 68	JJJ
T		REVISION STATUS CHANGED		18 NOV 68	JJJ
U		REVISION STATUS CHANGED		20 NOV 68	JJJ
V		REVISION STATUS CHANGED		4 FEB 69	TK RWH
W		REVISION STATUS CHANGED		15 APR 69	JJJ
Y		REVISION STATUS CHANGED		5 JUN 69	JJJ
Z		REVISED PER TDRR 37908		13 NOV 69	
AA		REVISED PER TDRR 37921		25 NOV 69	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 458, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017, 018 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019, 2001 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012667	—	2012775	SCT PRISM HOUSING, ASSY OF
					019	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

NEXT ASSY	USED ON
APPLICATION	

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DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEUSS 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
MC HURLEY 10-21-65
MIT APPROVAL

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HOUSTON, TEXAS

G&N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 2 OF 3

8106025 AA

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
17	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	32 SETS	1022780-011 1022781-011	8106087	2012796-011 2012797-011	SEXTANT AND TELESCOPE COVER ASSEMBLY
					32 SETS	2012796-011 2012797-011	8106083	2012796-021 2012797-021	
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 10 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)
20	KNOB REDESIGN TO IMPROVE LOCKING METHOD	N/A	ECP 773	-	002	2013250-000	8106092	2013250-011	APOLLO RANGE FINDER
21	COMPLETE REFURBISHMENT OF 121 TO LATEST BLOCK II CONFIGURATION (-081)	N/A	ECP 663	-	2	2011000-002	8106090	2011000-081	OPTICAL UNIT ASSEMBLY
22	TO PROVIDE LOCKING RINGS TO SXT AND SCT EYEPIECE ASSEMBLY TO PREVENT THE BACKING OFF OF EYEGUARD ASSEMBLIES DURING WEIGHTLESSNESS	0106058	ECP 795 CCA 497 -C632	APOLLO 11 AND SUBS	QTY-15 KITS	2012793-000	8106094	2012793-011	SCT STANDARD (ADJUSTABLE) EYEPIECE ASSEMBLY
		0106059			QTY-15 KITS	2012700-011	8106095	2012700-021	SXT EYEPIECE ASSEMBLY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
R		THIS SHEET ADDED PER TDRR 36669		14 AUG 68	R
S		REVISION STATUS CHANGED		7 NOV 68	JJJ
T		REVISED PER TDRR 37016		15 NOV 68	JJJ
U		REVISED PER TDRR 37049		20 NOV 68	JJJ
V		REVISED PER TDRR 37293		4 FEB 69	R RWH
W		REVISED PER TDRR 37491		15 APR 69	JJJ
Y		REVISED PER TDRR 37636		5 JUN 69	JJJ
Z		REVISED PER TDRR 37908		13 NOV 69	
AA		REVISED PER TDRR 37921.		25 NOV 69	JJJ

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CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
M.G. MURLEY 10-21-65
MIT APPROVAL

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HOUSTON, TEXAS

G & N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 3 OF 3

8106025 AB

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER: PART NO. REF. MOD. FROM	DRAWING NUMBER: RETROFIT KIT NO.	DRAWING NUMBER: PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121 20 	2 9 11	2011000 -000 1011000 -002 MOD I 1011000 -004	8106024 -001 8106024 -002 8106024 -002	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP 121 109 111 122 SP 123 201A 201 1-201 202 203 204	9 10 11 2 5 6 7 8 9 011 012 014 013 015 016	1011000-006 1011000-005 1011000-007 2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-001 8106045-002	1011000-008 1011000-009 1011000-010 2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	OPTICAL UNIT ASSEMBLY
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A 1-201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25495	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	mF
H		REVISED PER TDRR 34754	10/2/67	mF
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	[illegible] 68	JJJ
R		REVISION STATUS CHANGED	14 AUG 68	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	[illegible] 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ
V		REVISION STATUS CHANGED	4 FEB 69	RWH
W		REVISION STATUS CHANGED	15 APR 69	JJJ
Y		REVISION STATUS CHANGED	5 JUN 69	JJJ
Z		REVISION STATUS CHANGED	13 NOV 69	
AA		REVISION STATUS CHANGED	25 NOV 69	JJJ
AB		REVISION STATUS CHANGED	26 MAR 70	B.

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

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KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN

DRAWN G. Fuller DATE
CHECKED A. F. SCHOLZ
APPROVAL
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NASA APPROVAL
MIT APPROVAL

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HOUSTON, TEXAS

TITLE G&N MASTER RETROFIT KIT LIST

CODE IDENT NO. 80230 SIZE D NASA NUMBER 8106025
SCALE WEIGHT CALC ACTUAL SHEET 1 OF 3

8106025 AA

AB 8106025

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER: PART NO. REF. MOD. FROM	DRAWING NUMBER: RETROFIT KIT NO.	DRAWING NUMBER: PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017, 018 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019, 2001 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012667	——	2012775	SCT PRISM HOUSING, ASSY OF
					019	1013010	——	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	MTY
K		REVISED PER TDRR 35755	—	28 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	T
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	JJJ
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
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S		REVISED PER TDRR 36984		7 NOV 68	JJJ
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V		REVISION STATUS CHANGED		4 FEB 69	T RWH
W		REVISION STATUS CHANGED		15 APR 69	JJJ
Y		REVISION STATUS CHANGED		5 JUN 69	JJJ
Z		REVISED PER TDRR 37908		13 NOV 69	
AA		REVISED PER TDRR 37921		25 NOV 69	JJJ
AB		REVISION STATUS CHANGED		26-MAR-70	B.

NEXT ASSY	USED ON
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DWG. NO.: CONTRACT
DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEJERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
MC. HURLEY 10-21-65
MIT APPROVAL

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RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 2 OF 3

AB 8106025

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
R		THIS SHEET ADDED PER TDRR 36669		4 Aug 68	
S		REVISION STATUS CHANGED		7 NOV 68	JJ
T		REVISED PER TDRR 37016		15 NOV 68	JJJ
U		REVISED PER TDRR 37049		20 NOV 68	JJJ
V		REVISED PER TDRR 37293		4 FEB 69	RWH
W		REVISED PER TDRR 37491		15 APR 69	JJ
Y		REVISED PER TDRR 37636		5 JUN 69	JJJ
Z		REVISED PER TDRR 37908		13 NOV 69	
AA		REVISED PER TDRR 37921		25 NOV 69	JJJ
AB		REVISED PER TDRR 38075		26 MAR -70	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
17	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	32 SETS	1022780-011 1022781-011	8106087	2012796-011 2012797-011	SEXTANT AND TELESCOPE COVER ASSEMBLY
					32 SETS	2012796-011 2012797-011	8106083	2012796-021 2012797-021	
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 10 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)
20	KNOB REDESIGN TO IMPROVE LOCKING METHOD	N/A	ECP 773	-	002	2013250-000	8106092	2013250-011	APOLLO RANGE FINDER
21	COMPLETE REFURBISHMENT OF 121 TO LATEST BLOCK II CONFIGURATION (-081)	N/A	ECP 663	-	2	2011000-002	8106090	2011000-081	OPTICAL UNIT ASSEMBLY
22	TO PROVIDE LOCKING RINGS TO SXT AND SCT EYEPIECE ASSEMBLY TO PREVENT THE BACKING OFF OF EYEGUARD ASSEMBLIES DURING WEIGHTLESSNESS	0106058	ECP 795 CCA 497 -0632	APOLLO 11 AND SUBS	QTY-15 KITS	2012793-000	8106094	2012793-011	SCT STANDARD (ADJUSTABLE) EYEPIECE ASSEMBLY
		0106059			QTY-15 KITS	2012700-011	8106095	2012700-021	SXT EYEPIECE ASSEMBLY
23	ADDITION OF FIELD STOP TO ELIMINATE HALO ON RETICLE	0106060	ECP 1007	APOLLO 14 AND SUBS	2001, 2004, 2006, 2007, 2008, 2011, 2014, 2015, 2016, 2018 2019 & 2022	2012791-011	8106096	2012791-021	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASS'Y.

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APPLICATION	

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DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEVERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
M.G. MURLEY 10-21-65
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G & N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 3 OF 3

BRL 10770-A

8106025 AC

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001	8106045-002	2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022		2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A 1-201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				204	016	2011000-034		2011000-038	
				205	017	2011000-041		2011000-042	
				209	021	2011000-061		2011000-071	
				210	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25495	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	M.F
F		REVISED PER TDRR 34082	7/3/67	M.F
G		REVISED PER TDRR 34379	8/18/67	M.F
H		REVISED PER TDRR 34754	10/2/67	M.F
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	17 NOV 68	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ
V		REVISION STATUS CHANGED	4 FEB 69	RWH
W		REVISION STATUS CHANGED	15 APR 69	JJJ
Y		REVISION STATUS CHANGED	5 JUN 69	JJJ
Z		REVISION STATUS CHANGED	13 NOV 69	
AA		REVISION STATUS CHANGED	25 NOV 69	JJJ
AB		REVISION STATUS CHANGED	26 MAR 70	B.
AC		REVISION STATUS CHANGED	15 SEP 70	JJJ

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

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TITLE
G&N MASTER
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CODE IDENT NO. 80230
SIZE D
NASA NUMBER 8106025
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ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017, 018 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019, 2001 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012667	—	2012775	SCT PRISM HOUSING, ASSY OF
					019	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	WTY
K		REVISED PER TDRR 35755	—	28 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	TK
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	JJJ
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
R		REVISION STATUS CHANGED		14 AUG 68	TK
S		REVISED PER TDRR 36984		7 NOV 68	JJJ
T		REVISION STATUS CHANGED		18 NOV 68	JJJ
U		REVISION STATUS CHANGED		20 NOV 68	JJJ
V		REVISION STATUS CHANGED		4 FEB 69	TK RWH
W		REVISION STATUS CHANGED		15 APR 69	JJJ
Y		REVISION STATUS CHANGED		5 JUN 69	JJJ
Z		REVISED PER TDRR 37908		13 [illegible]	JW
AA		REVISED PER TDRR 37921		25 NOV 69	JJJ
AB		REVISION STATUS CHANGED		26-MAR-70	B.
AC		REVISION STATUS CHANGED		15 SEP 70	JJJ

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SIZE D CODE IDENT NO. 80230 8106025
SCALE SHEET 2 OF 3

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
R		THIS SHEET ADDED PER TDRR 36669		14 Aug 68	
S		REVISION STATUS CHANGED		7 NOV 68	JJJ
T		REVISED PER TDRR 37016		15 NOV 68	JJJ
U		REVISED PER TDRR 37049		20 NOV 68	JJJ
V		REVISED PER TDRR 37293		4 FEB 69	RW
W		REVISED PER TDRR 37491		15 APR 69	JJJ
Y		REVISED PER TDRR 37636		5 JUN 69	JJJ
Z		REVISED PER TDRR 37908		13 NOV 69	
AA		REVISED PER TDRR 37921		25 NOV 69	JJJ
AB		REVISED PER TDRR 38075		26 MAR 70	JB.
AC		REVISED PER TDRR 38236		15 SEP 70	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
17	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	32 SETS	1022780-011 1022781-011	8106087	2012796-011 2012797-011	SEXTANT AND TELESCOPE COVER ASSEMBLY
					32 SETS	2012796-011 2012797-011	8106093	2012796-021 2012797-021	
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 10 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)
20	KNOB REDESIGN TO IMPROVE LOCKING METHOD	N/A	ECP 773	-	002	2013250-000	8106092	2013250-011	APOLLO RANGE FINDER
21	COMPLETE REFURBISHMENT OF 121 TO LATEST BLOCK II CONFIGURATION (-081)	N/A	ECP 663	-	2	2011000-002	8106090	2011000-081	OPTICAL UNIT ASSEMBLY
22	TO PROVIDE LOCKING RINGS TO SXT AND SCT EYEPIECE ASSEMBLY TO PREVENT THE BACKING OFF OF EYEGUARD ASSEMBLIES DURING WEIGHTLESSNESS	0106058	ECP 795 CCA 497 -0632	APOLLO 11 AND SUBS	QTY- 15 KITS	2012793-000	8106094	2012793-011	SCT STANDARD (ADJUSTABLE) EYEPIECE ASSEMBLY
		0106059			QTY- 15 KITS	2012700-011	8106095	2012700-021	SXT EYEPIECE ASSEMBLY
23	ADDITION OF FIELD STOP TO ELIMINATE HALO ON RETICLE	0106060	ECP 1007	APOLLO 14 AND SUBS	2001, 2004, 2006, 2007, 2008, 2011, 2014, 2015, 2016, 2018 2019 & 2022	2012791-011	8106096	2012791-021	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASS'Y.
24	(A) REFURBISH OUA BY THE INCLUSION OF: (a) RECLEANED AND RELUBRICATED BEARINGS IN OUA WITH DIFFERENT LUBRICANT MIXTURE. (b) NEW MOTOR-TACHS WITH DIFFERENT LUBRICANT (c) REDESIGN MOUNTING TECHNIQUE FOR LIGHT RODS IN SCT. (d) PASSIVATION OF BERYLLIUM OPTICAL BASE	N/A	ECP 1013	8 UNITS APOLLO 17 AND SUBS		2011000-081	8106097	2011000-091	OPTICAL UNIT ASSEMBLY

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REVISIONS		23 359		
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	(REF) PART NO. REF. MOD. FROM	RETROFIT KIT NO.	(REF) PART NO. REF. MOD. TO	END ITEM
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/20/65		10	1011000-003	8106012	1011000-006	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD 1	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD 1	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0065 & ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY

MASTER

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

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DRAWN DATE 10/12/65
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APPROVAL 10/21/65
APPROVAL E. Thaup 10/21/65
NASA APPROVAL 10/4/65
MIT APPROVAL

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G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. SIZE D NASA NUMBER 8106025
SCALE WEIGHT CALC ACTUAL SHEET 1 OF 1

8106025 B

REVISIONS 23 359				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498		
B		REVISED PER TDRR 26846	3/3/66	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	(REF) PART NO. REF. MOD. FROM	RETROFIT KIT NO.	(REF) PART NO. REF. MOD. TO	END ITEM
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/23/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0063 & ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS N SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

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CODE IDENT NO.
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NASA NUMBER 8106025
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8106025 B

8106025 C

REVISIONS				
SYM	ZONE	DESCRIPTION	DA	APPROVA
A		REVISED PER TDRR 25498	2/1	
B		REVISED PER TDRR 26846	3/3	
C		REVISED PER TDRR 27723	4/1/66	

359

M).	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECT-IVITY G&N	SERIAL NO.	(REF) PART NO. REF. MOD. FROM	RETROFIT KIT NO.	(REF) PART NO. REF. MOD. TO	END ITEM
	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/20/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121 20	2 9 11	2011000 -000 1011000 -002 MOD I 1011000 -004	8106024 -001 8106024 -002 8106024 -002	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0063 & ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123 CCA 497-0053	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY

8106025 C

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

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APPROVAL 10/21/65
APPROVAL
NASA APPROVAL 10/21/65
MIT APPROVAL

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G & N MASTER
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CODE IDENT NO.
SIZE D
NASA NUMBER 8106025
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SHEET 1 OF

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REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/ /66	
C		REVISED PER TDRR 27723	4/ /66	
D		REVISED PER TDRR 29552	6/ /66	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/20/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 - 007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0065 & ECP 55		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 - 004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123 CCA 497-0033	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES.	0106022	ECP No. 290 CCA 497-0068 ECP No. 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001	8106045-002	2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022		2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	

MAST

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOL ON: FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	KOLLSMAN INSTRUMENT CORPORATION ELMHURST NEW YORK KIC PN
APPLICATION		MATERIAL	DRAWN D. Fuller DATE 10/7/65 CHECKED A. BUCHOLZ 10/15/65 APPROVAL 10/21/65 APPROVAL E. Thaup 10/21/65
		CONTRACT	NASA APPROVAL 10/4/65 MIT APPROVAL M G Hurley 10-6-65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106025
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 1

8106025 E

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER: PART NO. REF. MOD. FROM	DRAWING NUMBER: RETROFIT KIT NO.	DRAWING NUMBER: PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/20/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0065 & ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123 CCA 497-0033	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP No. 290 CCA 497-0068 ECP No. 202	20 12 SP	9 10 11	1011000-006 1011000-005 1011000-007	8106045-001	1011000-008 1011000-009 1011000-010	OPTICAL UNIT ASSEMBLY
				121 109 111 122 SP 123 201A 201 1-201 202 203 204	2 5 6 7 8 9 011 012 014 013 015 016	2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-002	2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	CCA 497-0331 & ECP 0453	OUA 201A 1-201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY

REVISIONS 23359

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/6	

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL 10/21/65
APPROVAL E. Thompson
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. | SIZE D | NASA NUMBER 8106025
SCALE | WEIGHT CALC ACTUAL | SHEET 1 OF 1

MASTER

E-100

8106025 F

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	mjF
F		REVISED PER TDRR 34082	7/3/67	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	 RETROFIT KIT NO.	 PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/20/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0063 & ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123 CCA 497-0033	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP NO. 290 CCA 497-0068 ECP No. 202	20 12 SP	9 10 11	1011000-006 1011000-005 1011000-007	8106045-001	1011000-008 1011000-009 1011000-010	OPTICAL UNIT ASSEMBLY
				121 109 111 122 SP 123 201A 201 1-201 202 203 204	2 5 6 7 8 9 011 012 014 013 015 016	2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-002	2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	CCA 497-0331 & ECP 0453	OUA 201A +201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A (IN HOUSE)	CCA 497-0438	207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	+ −	+ −	+ −

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MATERIAL

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN

DRAWN G. Fuller DATE 10/21/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL [illegible] 10/21/65
APPROVAL [illegible]
NASA APPROVAL [illegible] 10/21/65
MIT APPROVAL [illegible] 10-21-65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106025
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 1

8106025 F

8106025 G

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498		
B		REVISED PER TDRR 26846	3/3/..	
C		REVISED PER TDRR 27723		
D		REVISED PER TDRR 29552		
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/8/67	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/12/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0063 & ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123 CCA 497-0033	101	3	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
				110	5				
				111	6				
				102	4				
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP NO. 290 CCA 497-0068 ECP No. 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001	8106045-002	2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022		2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	CCA 497-0331 & ECP 0453	OUA 201A	011	2011000-033	8106053	2011000-036	OPTICAL UNIT ASSEMBLY
				+201(SPARE)	014	2011000-034		2011000-037	
8	ADDITION OF THERMOCOUPLES	N/A (IN HOUSE)	CCA 497-0438	207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590 CCA497-0448	204	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				205	016	2011000-034		2011000-038	
				206	017	2011000-041		2011000-042	
				207	021	2011000-061		2011000-071	
				208	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECPS 453, 475, 507 AND 590 CCA 497-0438 AND 0448	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY

ITEM NO	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO | SIZE D | NASA NUMBER 8106025

SCALE | WEIGHT CALC ACTUAL | SHEET 1 OF

8106025 G

SYM	ZONE	REVISIONS 23359 DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	m F
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	m F
H		REVISED PER TDRR 34754	10/2/67	m F

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 8/20/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD 1	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000 -002 MOD 1	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0063 & ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312	—	11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123 CCA 497-0033	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES.	0106022	ECP No. 290 CCA 497-0068 ECP No. 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001		2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022	8106045-002	2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	CCA 497-0331 & ECP 0453	OUA 201A	011	2011000-033	8106053	2011000-036	OPTICAL UNIT ASSEMBLY
				+201(SPARE)	014	2011000-034		2011000-037	
8	ADDITION OF THERMOCOUPLES	N/A (IN HOUSE)	CCA 497-0438	207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590 CCA497-0448	204	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				205	016	2011000-034		2011000-038	
				206	017	2011000-041		2011000-042	
				207	021	2011000-061		2011000-071	
				208	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECPS 453, 475, 507 AND 590 CCA 497-0438 AND 0448	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

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NEXT ASSY	USED ON

APPLICATION

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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN D. [illegible] DATE 10/7/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL [illegible] 10/20/65
APPROVAL E. Thompson
NASA APPROVAL [illegible] 10/4/65
MIT APPROVAL [illegible]

MANNED
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G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. SIZE D NASA NUMBER 8106025
SCALE WEIGHT CALC ACTUAL SHEET 1 OF 1

8106025 J

REVISIONS 23359				
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D		REVISED PER TDRR 29582	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	mJF
F		REVISED PER TDRR 34082	7/3/67	mJF
G		REVISED PER TDRR 34379	8/18/67	mJF
H		REVISED PER TDRR 34754	10/2/67	mJF
J		REVISION STATUS CHANGED	18 DEC 67	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	CCA 497/0067 & ECP 160 2/22/65		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	CCA 497/0067 & ECP 160	121	2	2011000-000	8106024-001	2011000-001	OPTICAL UNIT ASSEMBLY
				20	9	1011000-002 MOD 1	8106024-002	1011000-006	OPTICAL UNIT ASSEMBLY
					11	1011000-004	8106024-002	1011000-007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	CCA 497/0087 & ECP 116	20	9	1011000-002 MOD 1	8106032	1011000-006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	CCA 497/0063 & ECP 85		11	1011000-004	8106033	1011000-007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000-004	8106039	1011000-007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 2° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123 CCA 497-0033	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP NO. 290 CCA 497-0068 ECP No. 202	20 12 SP	9 10 11	1011000-006 1011000-005 1011000-007	8106045-001	1011000-008 1011000-009 1011000-010	OPTICAL UNIT ASSEMBLY
				121 109 111 122 SP 123 201A 201 1-201 202 203 204	2 5 6 7 8 9 011 012 014 013 015 016	2011000-001 2011000-011 2011000-011 2011000-028 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-036	8106045-002	2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	CCA 497-0331 & ECP 0453	OUA 201A + 201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A (IN HOUSE)	CCA 497-0438	207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590 CCA 497-0448	204 205 206 207 208	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECPS 453, 475, 507 AND 590 CCA 497-0438 AND 0448	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-038	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN D. Fuller DATE 10/2/65
CHECKED A. SCHOLZ 10/13/65
APPROVAL 10/22/65
APPROVAL E. Thaup 10/22
NASA APPROVAL 10/4/65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230 SIZE D NASA NUMBER 8106025
SCALE WEIGHT CALC ACTUAL SHEET 1 OF 2

8106025 J

J 8106025

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO.	DATE	APPD.
J		THIS SHEET ADDED PER TORR 35318		28 DEC 67	WY

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECP'S 455, 475 AND 507	204 205 206	015 016 017	2011000-088 2011000-088 2011000-042	- 8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		DO NOT SCALE THIS DRAWING	DRAWN G. FULLER DATE 10/12/65 CHECKED A. BUCHOLZ 10/15/65 APPROVAL R. SEJERSON 10/21/65	G&N MASTER RETROFIT KIT LIST
		CONTRACT		
		MATERIAL —	MICHAELS 10-21-65 NASA APPROVAL	SIZE D CODE IDENT NO. 80230 8106025
		APPROVAL	MC HURLEY 10-21-65 MIT APPROVAL	SCALE SHEET 2 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
(M) J		THIS SHEET ADDED PER TDRR 35318		28 DEC 67	MY
K		REVISED PER TDRR 35755	—	26 FEB 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-088 2011000-058 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT
DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEVERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
M.G. HURLEY 10-21-65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 2 OF 2

8106025 L

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25495	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29352	6/1/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	
H		REVISED PER TDRR 34754	10/12/67	
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001	8106045-002	2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-028		2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-036		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	N A	ECP 453	OUA 201A	011	2011000-033	8106053	2011000-036	OPTICAL UNIT ASSEMBLY
				+204(SPARE)	014	2011000-0[illegible]		2011000-037	
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				204	016	2011000-034		2011000-038	
				205	017	2011000-041		2011000-042	
				209	021	2011000-061		2011000-071	
				210	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL OR: FRACTIONS ± | DECIMALS ± | ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
KIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230
SIZE D
NASA NUMBER 8106025
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 2

8106025

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	WTY
K		REVISED PER TDRR 35755	—	20 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
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MATERIAL —
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DOC NO. CONTRACT
DRAWN G FULLER DATE [illegible]
CHECKED A. [illegible] [illegible]
APPROVAL B. [illegible] [illegible]
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
MG HURLEY 10-21-65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER
RETROFIT KIT LIST

SIZE	CODE IDENT NO.	
D	80230	8106025
SCALE		SHEET 2 OF 2

M 8106025

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25493	[illegible]	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29352	[illegible]	
E		REVISED PER TDRR 34020	6/23/67	m F
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	m F
H		REVISED PER TDRR 34754	10/2/67	m F
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ

REVISIONS 23 [illegible]

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121 20	2 9 11	2011000 -000 1011000 -002 MOD 1 1011000 -004	8106024 -001 8106024 -002 8106024 -002	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD 1	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO. 2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP 121 109 111 122 SP 123 201A 201 1-201 202 203 204	8 10 11 2 5 6 7 8 9 011 012 014 013 015 016	1011000-006 1011000-005 1011000-007 2011000-001 2011000-011 2011000-011 2011000-028 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-001 8106045-002	1011000-008 1011000-009 1011000-010 2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	OPTICAL UNIT ASSEMBLY
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A +201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN [illegible] DATE [illegible]
CHECKED A.T. SCHOLZ [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230
SIZE D
NASA NUMBER 8106025
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 2

8106025 M

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
Ⓜ J		THIS SHEET ADDED PER TDRR 35318		28 DEC 67	MY
Ⓜ K		REVISED PER TDRR 35755	—	26 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	E
M		REVISED PER TDRR 36002		4 APR 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 458, 475 AND 507	204 205 206	015 016 017	2011000-088 2011000-058 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY

NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES
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APPROVAL

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL D. SEVERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
M.G. HURLEY 10-21-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 2 OF 2

N 8106025

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25490	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29352	6/1/66	
E		REVISED PER TDRR 34020	6/23/67	m F
F		REVISED PER TDRR 34082	7/3/67	m F
G		REVISED PER TDRR 34379	8/18/67	m F
H		REVISED PER TDRR 34754	10/2/67	m F
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO. 2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101	3	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
				110	5				
				111	6				
				102	4				
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT. FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20	8	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001		2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022	8106045-002	2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A	011	2011000-033	8106053	2011000-036	OPTICAL UNIT ASSEMBLY
				+ 201 SPARE	014	2011000-034		2011000-037	
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				204	016	2011000-034		2011000-038	
				205	017	2011000-041		2011000-042	
				209	021	2011000-061		2011000-071	
				210	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± DECIMALS ± ANGLES ±
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MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN DATE 10/2/65
CHECKED A. F. SCHOLZ 10/5/65
APPROVAL 10/6/65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230 SIZE D NASA NUMBER 8106025
SCALE | WEIGHT CALC ACTUAL | SHEET 1 OF 2

8106025 N

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
J		THIS SHEET ADDED PER TDRR 35818		28 DEC 67	MY
K		REVISED PER TDRR 35755	—	20 FEB 68	JJ
L		REVISION STATUS CHANGED	-	2 APR 68	E
M		REVISED PER TDRR 36002		4 APR 68	JJ
N		REVISED PER TDRR 36411		26 JUN 68	JJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER: PART NO. REF. MOD. FROM	DRAWING NUMBER: RETROFIT KIT NO.	DRAWING NUMBER: PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECP'S 458, 475 AND 507	204 205 206	015 016 017	2011000-088 2011000-088 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022	2012748-000		2012748-011	SXT LEA EYEPIECE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
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APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL D. SEVERSON 10/21/65
CONTRACT
NASA APPROVAL MICHAELS 10-21-65
MIT APPROVAL M. HURLEY 10-21-65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 2 OF 2

8106025 P

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25495	4/1/66	
B		REVISED PER TDRR 26846	7/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29382	6/1/66	
E		REVISED PER TDRR 34020	6/23/67	mF
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	mF
H		REVISED PER TDRR 34754	10/2/67	mF
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO REF. MOD. FROM	 RETROFIT KIT NO.	 PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-005	8106012	1011000-006	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD I	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 53		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20	9	1011000-006	8106048-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001	8106045-002	2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022		2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A +201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	 015 016 017 021 024	 2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	 2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-038	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN DATE 10/2/65
CHECKED A.F. SCHOLZ 10/5/65
APPROVAL 10/2/65
APPROVAL
NASA APPROVAL 10/4/65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO 80230
SIZE D
NASA NUMBER 8106025
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 2

8106025 P

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
J		THIS SHEET ADDED PER TDRR 35815		28 DEC 67	
K		REVISED PER TDRR 35755	—	FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	JJJ
P		REVISED PER TDRR 36454		15 JUL 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 458, 475 AND507	204 205 206	015 016 017	2011000-088 2011000-088 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	01C6058 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 [illegible] 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 015 016 017 018 020 021 025 026 028 029	2011000-07	8102782	2011000-08	OPTICAL UNIT ASSY

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DRAWN G. FULLER CHECKED A. BUCHOLZ 10/15/65 APPROVAL CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		DO NOT SCALE THIS DRAWING MATERIAL — APPROVAL	MICHAELS 10-21-65 NASA APPROVAL M. HURLEY 10-21-65 MIT APPROVAL	G&N MASTER RETROFIT KIT LIST SIZE D CODE IDENT NO. 80230 8106025 SCALE SHEET 2 OF 2

8106025 R

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECT-IVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-006	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121 20	2 9 11	2011000 -000 1011000 -002 MOD I 1011000 -004	8106024 -001 8106024 -002 8106024 -00[illegible]	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO. 2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 128	101 110 111 102	8 3 6 4	2011000- 011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP	8 10 11	1011000-006 1011000-009 1011000-007	8106045- 001	1011000-008 1011000-009 1011000-010	OPTICAL UNIT ASSEMBLY
				121 109 111 122 SP 123 201A 201 1-201 202 203 204	2 5 6 7 8 9 011 012 014 013 015 016	2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045- 002	2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	N/A	ECP 470	[illegible] + 204 SPARE	011 014	[illegible] 2011000-034	8106053	[illegible] 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106065	2011000-039	OPTICAL UNIT ASSEMBLY

REVISIONS 23377

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27725	4/1/66	
D		REVISED PER TDRR 29352	4/13/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	
H		REVISED PER TDRR 34734	10/2/67	
J		REVISION STATUS CHANGED	18 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	MAR 68	

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	+ -	+ -	+ -

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK

KIC PN

DRAWN DATE 10/2/65
CHECKED A. SCHOLZ
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G & N MASTER
RETROFIT KIT LIST

CODE IDENT NO.	SIZE	NASA NUMBER
80230	D	8106025

SCALE | WEIGHT | CALC ACTUAL | SHEET 1 OF 3

8106025 R

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO.	DATE	APPD
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	
K		REVISED PER TDRR 35755	—	20 FEB 68	JJ
L		REVISION STATUS CHANGED	-	2 APR 68	
M		REVISED PER TDRR 36002		4 APR 68	JJ
N		REVISED PER TDRR 36411		26 JUN 68	JJ
P		REVISED PER TDRR 36454		15 JUL 68	JJ
R		REVISION STATUS CHANGED		14 MAY 69	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 458, 475 AND 507	204 205 206	015 016 017	2011000-0[illegible] 2011000-0[illegible] 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012780	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012781	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	015 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 015 016 017 018 020 021 025 026 028 029	2011000-0[illegible]	8102782	2011000-0[illegible]	OPTICAL UNIT ASSY

NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± — 3 PLACE DECIMALS ± — ANGLES ± —
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MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN G. FULLER DATE 10/13/66
CHECKED A. BUCHOLZ 10/15/66
APPROVAL D. [illegible]
CONTRACT
NASA APPROVAL MICHAELS 10-31-66
MIT APPROVAL M. HUGLEY 10-31-66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 2 OF 3

8106025 R

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
R		THIS SHEET ADDED PER TDRR 36669		14 Aug 66	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER: PART NO. REF. MOD. FROM	DRAWING NUMBER: RETROFIT KIT NO.	DRAWING NUMBER: PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
17	ADDITION OF STAINLESS STEEL SPRING	N/A	ECP 702F	N/A	17 19 22	1022780-011 1022780-011 1022780-011	8106087	2012796-011 2012796-011 2012796-011	SEXTANT COVER ASSEMBLY
					10 17 19	1022781-011 1022781-011 1022781-011		2012797-011 2012797-011 2012797-011	TELESCOPE COVER ASSEMBLY
	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	1 THRU 16 18 20 21 23 THRU 32 1 THRU 9 11 THRU 16 18 20 THRU 32	1022780-011 1022781-011 ↓ 1022781-011 1022780-011 1022781-011	8106083 & 8106087 ↓ 8106083 & 8106087	2012796-021 & 2012797-021 ↕ 2012796-021 & 2012797	SEXTANT AND TELESCOPE COVER ASSEMBLY
	DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE.	N/A	ECP 702	N/A	17 19 22	2012796-011 2012796-011 2012796-011	8106083	2012796-021 2012796-021 2012796-021	SEXTANT COVER ASSEMBLY
					10 17 19	2012797-011 2012797-011 2012797-011		2012797-021 2012797-021 2012797-021	TELESCOPE COVER ASSEMBLY

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN G. FULLER DATE 10/12/66
CHECKED A. BUCHANAN 10/18/66
APPROVAL
CONTRACT
MICHAELS 10-21-66
NASA APPROVAL
M. G. SHIRLEY 10-21-66
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 3 OF 3

8106025 | S

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO REF MOD FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF MOD TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121 20	2 9 11	2011000 -000 1011000 -002 MOD 1 1011000 -004	8106024 -001 8106024 -002 8106024 -002	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD 1	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 [illegible]	8106033	1011000 [illegible]	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSE TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP 121 109 111 122 SP 123 201A 201 1-201 202 203 204	9 10 11 2 5 6 7 8 9 011 012 014 013 015 016	1011000-006 1011000-008 1011000-007 2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-001 8106045-002	1011000-008 1011000-009 1011000-010 2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	OPTICAL UNIT ASSEMBLY
7	ADDITION OF WEDGES TO REDUCE SHIFTS	N/A	ECP 453	OUA 201A 206 SPARE	011 014	2011000-033 2011000-032	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25495	[illegible]	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	[illegible]	
D		REVISED PER TDRR 29552	[illegible]	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	
H		REVISED PER TDRR 34754	10/2/67	
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35934	2 APR 68	
M		REVISION STATUS CHANGED	2 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	[illegible]	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

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NASA APPROVAL
MIT APPROVAL

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HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230 SIZE D NASA NUMBER 8106025
SCALE WEIGHT CALC ACTUAL SHEET 1 OF 3

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8106025

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
REVISIONS					
J		THIS SHEET ADDED PER TDRR 35515		28 DEC 67	
K		REVISED PER TDRR 35755	—	28 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
R		REVISION STATUS CHANGED		14 AUG 68	
S		REVISED PER TDRR 36984		7 NOV 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

NEXT ASSY	USED ON
APPLICATION	

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CAMBRIDGE MASS
DRAWN [illegible] DATE [illegible]
CHECKED A. [illegible]
APPROVAL [illegible]
CONTRACT
NASA APPROVAL [illegible] 0-3-65
MIT APPROVAL [illegible] 10-21-65

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RETROFIT KIT LIST

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CODE IDENT NO 80230
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SHEET 2 OF 2

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
R		THIS SHEET ADDED PER TDRR 36669		4 Aug 68	
S		REVISION STATUS CHANGED		7 NOV 68	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF MOD. TO	
17	ADDITION OF STAINLESS STEEL SPRING	N/A	ECP 702F	N/A	17 19 22	1022780-011 1022780-011 1022780-011	8106087	2012796-011 2012796-011 2012796-011	SEXTANT COVER ASSEMBLY
					10 17 19	1022781-011 1022781-011 1022781-011		2012797-011 2012797-011 2012797-011	TELESCOPE COVER ASSEMBLY
	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	1 THRU 16 18 20 21 23 THRU 32 1 THRU 9 11 THRU 16 18 20 THRU 32	1022780-011 1022781-011 ↕ 1022781-011 1022780-011 1022781-011	8106083 & 8106087 ↕ 8106083 & 8106087	2012796-021 & 2012797-021 ↕ 2012796-021 & 2012797	SEXTANT AND TELESCOPE COVER ASSEMBLY
	DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE.	N/A	ECP 702	N/A	17 19 22	2012796-011 2012796-011 2012796-011	8106083	2012796-021 2012796-021 2012796-021	SEXTANT COVER ASSEMBLY
					10 17 19	2012797-011 2012797-011 2012797-011		2012797-021 2012797-021 2012797-021	TELESCOPE COVER ASSEMBLY

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
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CAMBRIDGE MASS
DRAWN G. FULLER DATE 2 65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEVERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
M.G. MURLEY 10-21-65
MIT APPROVAL

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SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 3 OF 3

8106025 T

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25430	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27725	4/1/66	
D		REVISED PER TDRR 29552	6/3/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34092	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	
H		REVISED PER TDRR 34754	10/2/67	
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35934	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	[illegible]	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. PRE MOD FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. POST MOD TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121 20	2 9 11	2011000 -000 1011000 -002 MOD 1 1011000 -004	8106024 -001 8106024 -002 8106024 -002	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, [illegible] VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD 1	8106032	1011000 -00[illegible]	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO. 2	[illegible]	ECP 33		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	C106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP 121 109 111 122 SP 123 201A 201 1-201 202 203 204	9 10 11 2 5 6 7 8 9 011 012 014 013 015 016	1011000-006 1011000-008 1011000-007 2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-001 8106045-002	1011000-008 1011000-009 1011000-010 2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	OPTICAL UNIT ASSEMBLY
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A 205SPARE	011 014	2011000-033 2011000-038	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
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NASA APPROVAL
MIT APPROVAL

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SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.	SIZE	NASA NUMBER
80230	D	8106025

SCALE | WEIGHT CALC ACTUAL | SHEET 1 OF 2

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	WY / AL
K		REVISED PER TDRR 35755	—	29 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	JJJ
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
R		REVISION STATUS CHANGED		14 AUG 68	
S		REVISED PER TDRR 36984		7 NOV 68	JJJ
T		REVISION STATUS CHANGED		18 NOV 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES
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MICHAELS 0-2-65
NASA APPROVAL
M. HURLEY 10-21-65
MIT APPROVAL

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G&N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO 80230
8106025
SCALE
SHEET 2 OF —

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
R		THIS SHEET ADDED PER TDRR 36669		4 Aug 68	R
S		REVISION STATUS CHANGED		7 NOV 68	JJ
T		REVISED PER TDRR 37016		15 NOV 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF MOD. TO	END ITEM (DRAWING TITLE)
17	ADDITION OF STAINLESS STEEL SPRING	N/A	ECP 702F	N/A	17 19 22	1022780-011 1022780-011 1022780-011	8106087	2012796-011 2012796-011 2012796-011	SEXTANT COVER ASSEMBLY
					10 17 19	1022781-011 1022781-011 1022781-011		2012797-011 2012797-011 2012797-011	TELESCOPE COVER ASSEMBLY
	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	1 THRU 16 18 20 21 23 THRU 32 1 THRU 9 11 THRU 16 18 20 THRU 32	1022780-011 1022781-011 ↓ 1022781-011 1022780-011 1022781-011	8106083 & 8106087 ↓ 8106083 & 8106087	2012796-021 & 2012797-021 ↕ 2012796-021 & 2012797	SEXTANT AND TELESCOPE COVER ASSEMBLY
	DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE.	N/A	ECP 702	N/A	17 19 22	2012796-011 2012796-011 2012796-011	8106083	2012796-021 2012796-021 2012796-021	SEXTANT COVER ASSEMBLY
					10 17 19	2012797-011 2012797-011 2012797-011		2012797-021 2012797-021 2012797-021	TELESCOPE COVER ASSEMBLY
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY

NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
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INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN G. FULLER DATE 9-2-65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEVERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
M.G. MURLEY 10-21-65
MIT APPROVAL

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G & N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO 80230
8106025
SCALE
SHEET 3 OF 3

U 8106025

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000-000	8106024-001	2011000-001	OPTICAL UNIT ASSEMBLY
				20	9	1011000-002 MOD I	8106024-002	1011000-006	OPTICAL UNIT ASSEMBLY
					11	1011000-004	8106024-002	1011000-007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000-002 MOD I	8106032	1011000-006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO. 2	0106016	ECP 83		11	1011000-004	8106033	1011000-007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS	0106028	ECP 312		11	1011000-004	8106039	1011000-007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001	8106045-002	2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-028		2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-025	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A	011	2011000-033	8106053	2011000-036	OPTICAL UNIT ASSEMBLY
				+201(SPARE)	014	2011000-034		2011000-037	
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				204	016	2011000-034		2011000-038	
				205	017	2011000-041		2011000-042	
				209	021	2011000-061		2011000-071	
				210	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES. MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	
H		REVISED PER TDRR 34754	10/12/67	
J		REVISION STATUS CHANGED	26 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	14 AUG 68	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

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TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230 SIZE D NASA NUMBER 8106025
SCALE WEIGHT CALC ACTUAL SHEET 1 OF 3

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	
K		REVISED PER TDRR 35755	—	26 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		25 JUN 68	JJJ
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
R		REVISION STATUS CHANGED		14 AUG 68	
S		REVISED PER TDRR 36984		7 NOV 68	JJJ
T		REVISION STATUS CHANGED		18 NOV 68	JJJ
U		REVISION STATUS CHANGED		20 NOV 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-088 2011000-058 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

NEXT ASSY	USED ON
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DWG NO. CONTRACT
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MICHAELS 10-21-65
NASA APPROVAL
MC HURLEY 10-21-65
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SIZE D
CODE IDENT NO. 80230
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SHEET 2 OF 3

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
Ⓜ R		THIS SHEET ADDED PER TDRR 36669		7 Aug 68	
S		REVISION STATUS CHANGED		7 NOV 68	
T		REVISED PER TDRR 37016		15 NOV 68	
U		REVISED PER TDRR 37049		20 NOV 68	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
17	ADDITION OF STAINLESS STEEL SPRING	N/A	ECP 702F	N/A	17 19 22	1022780-011 1022780-011 1022780-011	8106087	2012796-011 2012796-011 2012796-011	SEXTANT COVER ASSEMBLY
					10 17 19	1022781-011 1022781-011 1022781-011		2012797-011 2012797-011 2012797-011	TELESCOPE COVER ASSEMBLY
	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	1 THRU 16 18 20 21 23 THRU 32 1 THRU 9 11 THRU 16 18 20 THRU 32	1022780-011 1022781-011 ↕ 1022781-011 1022780-011 1022781-011	8106083 & 8106087 ↕ 8106083 & 8106087	2012796-021 & 2012797-021 ↕ 2012796-021 & 2012797	SEXTANT AND TELESCOPE COVER ASSEMBLY
	DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE.	N/A	ECP 702	N/A	17 19 22	2012796-011 2012796-011 2012796-011	8106083	2012796-021 2012796-021 2012796-021	SEXTANT COVER ASSEMBLY
					10 17 19	2012797-011 2012797-011 2012797-011		2012797-021 2012797-021 2012797-021	TELESCOPE COVER ASSEMBLY
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 3 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)

NEXT ASSY	USED ON
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M. G. HURLEY 10-21-68
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SIZE D
CODE IDENT NO 80230
8106025
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SHEET 3 OF 3

8106025 V

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000-000	8106024-001	2011000-001	OPTICAL UNIT ASSEMBLY
				20	9	1011000-002 MOD I	8106024-002	1011000-006	OPTICAL UNIT ASSEMBLY
					11	1011000-004	8106024-002	1011000-007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000-002 MOD I	8106032	1011000-006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO. 2	0106016	ECP 83		11	1011000-004	8106033	1011000-007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000-004	8106039	1011000-007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001		2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022	8106045-002	2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-032		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A	011	2011000-033	8106053	2011000-036	OPTICAL UNIT ASSEMBLY
				1-201(SPARE)	014	2011000-034		2011000-037	
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				204	016	2011000-034		2011000-038	
				205	017	2011000-041		2011000-042	
				209	021	2011000-061		2011000-071	
				210	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25490	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	
H		REVISED PER TDRR 34754	10/2/67	
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	14 AUG [illegible]	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ
V		REVISION STATUS CHANGED	4 FEB 69	RWH

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

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APPROVAL
NASA APPROVAL 10/21/
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RETROFIT KIT LIST

CODE IDENT NO. 80230 | SIZE D | NASA NUMBER 8106025

SCALE | WEIGHT | CALC ACTUAL | SHEET 1 OF 3

8106025 V

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-058 2011000-058 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2010 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	MTY
Ⓜ K		REVISED PER TDRR 35755	—	28 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	TK
Ⓜ M		REVISED PER TDRR 36002		4 APR 68	JJJ
Ⓜ N		REVISED PER TDRR 36411		28 JUN 68	JJJ
Ⓜ P		REVISED PER TDRR 36454		16 JUL 68	JJJ
Ⓜ R		REVISION STATUS CHANGED		14 AUG 68	TK
S		REVISED PER TDRR 36984		7 NOV 68	JJJ
T		REVISION STATUS CHANGED		15 NOV 68	JJJ
Ⓜ U		REVISION STATUS CHANGED		20 NOV 68	JJJ
V		REVISION STATUS CHANGED		4 FEB 69	TK RVH

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APPROVAL R. SEVERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
MG. HURLEY 10-21-65
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SIZE D
CODE IDENT NO. 80230
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SHEET 2 OF 3

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		THIS SHEET ADDED PER TDRR 36669		4 AUG 68	R
S		REVISION STATUS CHANGED		7 NOV 68	JJ
T		REVISED PER TDRR 37016		15 NOV 68	JJ
U		REVISED PER TDRR 37049		20 NOV 68	JJ
V		REVISED PER TDRR 37293		4 FEB 69	R RWH

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
17	ADDITION OF STAINLESS STEEL SPRING	N/A	ECP 702F	N/A	17 19 22	1022780-011 1022780-011 1022780-011	8106087	2012796-011 2012796-011 2012796-011	SEXTANT COVER ASSEMBLY
					10 17 19	1022781-011 1022781-011 1022781-011		2012797-011 2012797-011 2012797-011	TELESCOPE COVER ASSEMBLY
	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	1 THRU 16 18 20 21 23 THRU 32 1 THRU 9 11 THRU 16 18 20 THRU 32	1022780-011 1022781-011 ↕ 1022781-011 1022780-011 1022781-011	8106083 & 8106087 ↕ 8106083 & 8106087	2012796-021 & 2012797-021 ↕ 2012796-021 & 2012797	SEXTANT AND TELESCOPE COVER ASSEMBLY
	DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE.	N/A	ECP 702	N/A	17 19 22	2012796-011 2012796-011 2012796-011	8106083	2012796-021 2012796-021 2012796-021	SEXTANT COVER ASSEMBLY
					10 17 19	2012797-011 2012797-011 2012797-011		2012797-021 2012797-021 2012797-021	TELESCOPE COVER ASSEMBLY
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 3 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)
20	KNOB REDESIGN TO IMPROVE LOCKING METHOD	N/A	ECP 773	-	002	2013250-000	8106092	2013250-011	APOLLO RANGE FINDER

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MICHAELS 10-21-65
NASA APPROVAL
M.G. MURLEY 10-21-65
MIT APPROVAL

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CODE IDENT NO. 80230
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SHEET 3 OF 3

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REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25438	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	MF
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	MF
H		REVISED PER TDRR 34754	10/2/67	MF
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	TK
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	14 AUG 68	TK
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ
V		REVISION STATUS CHANGED	4 FEB 69	TK RWH
W		REVISION STATUS CHANGED	15 APR 69	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121 20	2 9 11	2011000 -000 1011000 -002 MOD 1 1011000 -004	8106024 -001 8106024 -002 8106024 -002	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD 1	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP 121 109 111 122 SP 123 201A 201 1-201 202 203 204	8 10 11 2 5 6 7 8 9 011 012 014 013 015 016	1011000-00[illegible] 1011000-005 1011000-007 2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-001 8106045-002	1011000-008 1011000-009 1011000-010 2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	OPTICAL UNIT ASSEMBLY
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A 1-201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

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TITLE G&N MASTER RETROFIT KIT LIST

CODE IDENT NO. 80230
SIZE D
NASA NUMBER 8106025
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SHEET 1 OF 3

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ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	
K		REVISED PER TDRR 35755	—	28 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	JJJ
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
R		REVISION STATUS CHANGED		14 AUG 68	
S		REVISED PER TDRR 36984		7 NOV 68	JJJ
T		REVISION STATUS CHANGED		18 NOV 68	JJJ
U		REVISION STATUS CHANGED		20 NOV 68	JJJ
V		REVISION STATUS CHANGED		4 FEB 69	RWH
W		REVISION STATUS CHANGED		15 APR 69	JJJ

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SIZE D
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SHEET 2 OF 3

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SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
R		THIS SHEET ADDED PER TDRR 36669		14 AUG 68	R
S		REVISION STATUS CHANGED		7 NOV 68	JJJ
T		REVISED PER TDRR 37016		15 NOV 68	JJJ
U		REVISED PER TDRR 37049		20 NOV 68	JJJ
V		REVISED PER TDRR 37293		4 FEB 69	R RWH
W		REVISED PER TDRR 37491		15 APR 69	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER: PART NO. REF. MOD. FROM	DRAWING NUMBER: RETROFIT KIT NO.	DRAWING NUMBER: PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
17	ADDITION OF STAINLESS STEEL SPRING	N/A	ECP 702F	N/A	17 19 22	1022780-011 1022780-011 1022780-011	8106087	2012796-011 2012796-011 2012796-011	SEXTANT COVER ASSEMBLY
					10 17 19	1022781-011 1022781-011 1022781-011		2012797-011 2012797-011 2012797-011	TELESCOPE COVER ASSEMBLY
	ADDITION OF STAINLESS STEEL SPRING. AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	1 THRU 16 18 20 21 23 THRU 32 1 THRU 9 11 THRU 16 18 20 THRU 32	1022780-011 1022781-011 ↓ 1022781-011 1022780-011 1022781-011	8106083 & 8106087 ↓ 8106083 & 8106087	2012796-021 & 2012797-021 ↕ 2012796-021 & 2012797	SEXTANT AND TELESCOPE COVER ASSEMBLY
	DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE.	N/A	ECP 702	N/A	17 19 22	2012796-011 2012796-011 2012796-011	8106083	2012796-021 2012796-021 2012796-021	SEXTANT COVER ASSEMBLY
					10 17 19	2012797-011 2012797-011 2012797-011		2012797-021 2012797-021 2012797-021	TELESCOPE COVER ASSEMBLY
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 3 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)
20	KNOB REDESIGN TO IMPROVE LOCKING METHOD	N/A	ECP 773	-	002	2013250-000	8106092	2013250-011	APOLLO RANGE FINDER
21	COMPLETE REFURBISHMENT OF 121 TO LATEST BLOCK II CONFIGURATION (-081)	N/A	ECP 663	-	2	2011000-002	8106090	2011000-081	OPTICAL UNIT ASSEMBLY

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ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE).
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121 20 	2 9 11	2011000 -000 1011000 -002 MOD I 1011000 -004	8106024 -001 8106024 -002 8106024 -002	2011000 -001 1011000 -006 1011000 -007	OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD I	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20 12 SP	9 10 11	1011000-006 1011000-005 1011000-007	8106045-001	1011000-008 1011000-009 1011000-010	OPTICAL UNIT ASSEMBLY
				121 109 111 122 SP 123 201A 201 1-201 202 203 204	2 5 6 7 8 9 011 012 014 013 015 016	2011000-001 2011000-011 2011000-011 2011000-022 2011000-022 2011000-021 2011000-031 2011000-031 2011000-032 2011000-032 2011000-032 2011000-032	8106045-002	2011000-002 2011000-012 2011000-012 2011000-024 2011000-024 2011000-023 2011000-033 2011000-033 2011000-034 2011000-034 2011000-034 2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	N A	ECP 453	OUA 201A 1-201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203 204 205 209 210	015 016 017 021 024	2011000-034 2011000-034 2011000-041 2011000-061 2011000-061	8106063	2011000-038 2011000-038 2011000-042 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
10	REFURBISH TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

REVISIONS 23 359

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED ~~PER~~ TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	MF
H		REVISED PER TDRR 34754	10/2/67	MF
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	14 AUG 68	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ
V		REVISION STATUS CHANGED	4 FEB 69	RWH
W		REVISION STATUS CHANGED	15 APR 69	JJJ
Y		REVISION STATUS CHANGED	5 JUN 69	JJJ

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY | USED ON
APPLICATION

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DIMENSIONS ARE IN INCHES
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KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN DATE 10/2/65
CHECKED A.F. SCHOLZ 10/5/65
APPROVAL 10/21/65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230
SIZE D
NASA NUMBER 8106025
SCALE
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SHEET 1 OF 3

8106025

8106025 Y

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	MTY
K		REVISED PER TDRR 35755	—	26 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	
M		REVISED PER TDRR 36002		4 APR 68	JJJ
N		REVISED PER TDRR 36411		28 JUN 68	JJJ
P		REVISED PER TDRR 36454		16 JUL 68	JJJ
R		REVISION STATUS CHANGED		14 AUG 68	
S		REVISED PER TDRR 36984		7 NOV 68	JJJ
T		REVISION STATUS CHANGED		18 NOV 68	JJJ
U		REVISION STATUS CHANGED		20 NOV 68	JJJ
V		REVISION STATUS CHANGED		4 FEB 69	RWH
W		REVISION STATUS CHANGED		15 APR 69	JJJ
Y		REVISION STATUS CHANGED		5 JUN 69	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-038 2011000-038 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017 018 2002 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019 2001 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022 2002 2004 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING ASSY OF
					019 2003	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES
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INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT
DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEJERSON 10/21/65
CONTRACT
NASA APPROVAL MICHAELS 10-21-65
MIT APPROVAL M.G. HURLEY 10-21-65

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SPACECRAFT CENTER
HOUSTON, TEXAS

G&N MASTER RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 2 OF 3

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
R		THIS SHEET ADDED PER TDRR 36669		14 AUG 68	
S		REVISION STATUS CHANGED		7 NOV 68	JJJ
T		REVISED PER TDRR 37016		15 NOV 68	JJJ
U		REVISED PER TDRR 37049		20 NOV 68	JJJ
V		REVISED PER TDRR 37293		4 FEB 69	RWH
W		REVISED PER TDRR 37491		15 APR 69	JJJ
Y		REVISED PER TDRR 37636		5 JUN 69	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
17	ADDITION OF STAINLESS STEEL SPRING	N/A	ECP 702F	N/A	17 19 22	1022780-011 1022780-011 1022780-011	8106087	2012796-011 2012796-011 2012796-011	SEXTANT COVER ASSEMBLY
					10 17 19	1022781-011 1022781-011 1022781-011		2012797-011 2012797-011 2012797-011	TELESCOPE COVER ASSEMBLY
	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	1 THRU 16 18 20 21 23 THRU 32	1022780-011 1022781-011 ↕	8106083 & 8106087 ↕	2012796-021 & 2012797-021 ↕	SEXTANT AND TELESCOPE COVER ASSEMBLY
					1 THRU 9 11 THRU 16 18 20 THRU 32	1022781-011 1022780-011 1022781-011	8106083 & 8106087	2012796-021 & 2012797	
	DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE.	N/A	ECP 702	N/A	17 19 22	2012796-011 2012796-011 2012796-011	8106083	2012796-021 2012796-021 2012796-021	SEXTANT COVER ASSEMBLY
					10 17 19	2012797-011 2012797-011 2012797-011		2012797-021 2012797-021 2012797-021	TELESCOPE COVER ASSEMBLY
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 3 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)
20	KNOB REDESIGN TO IMPROVE LOCKING METHOD	N/A	ECP 773	-	002	2013250-000	8106092	2013250-011	APOLLO RANGE FINDER
21	COMPLETE REFURBISHMENT OF 121 TO LATEST BLOCK II CONFIGURATION (-081)	N/A	ECP 663	-	2	2011000-002	8106090	2011000-081	OPTICAL UNIT ASSEMBLY
22	TO PROVIDE LOCKING RINGS TO SXT AND SCT EYEPIECE ASSEMBLY TO PREVENT THE BACKING OFF OF EYEGUARD ASSEMBLIES DURING WEIGHTLESSNESS	0106058	ECP 795 CCA 497 -0632	APOLLO 11 AND SUBS	QTY-15 KITS	2012793-000	8106094	2012793-011	SCT STANDARD (ADJUSTABLE) EYEPIECE ASSEMBLY
		0106059			QTY-15 KITS	2012700-011	8106095	2012700-021	SXT EYEPIECE ASSEMBLY

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APPLICATION	

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2 PLACE DECIMALS ± ___ 3 PLACE DECIMALS ± ___ ANGLES ± ___
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MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN G. FULLER DATE 10/12/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL R. SEVERSON 10/21/65
CONTRACT
MICHAELS 10-21-65
NASA APPROVAL
M.G. MURLEY 10-21-65
MIT APPROVAL

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SPACECRAFT CENTER
HOUSTON, TEXAS

G & N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO. 80230
8106025
SCALE
SHEET 3 OF 3

Z 8106025

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR 25498	2/1/66	
B		REVISED PER TDRR 26846	3/3/66	
C		REVISED PER TDRR 27723	4/1/66	
D		REVISED PER TDRR 29552	6/13/66	
E		REVISED PER TDRR 34020	6/23/67	
F		REVISED PER TDRR 34082	7/3/67	
G		REVISED PER TDRR 34379	8/18/67	mF
H		REVISED PER TDRR 34754	10/2/67	mF
J		REVISION STATUS CHANGED	28 DEC 67	
K		REVISION STATUS CHANGED	28 FEB 68	JJJ
L		REVISED PER TDRR 35994	2 APR 68	
M		REVISION STATUS CHANGED	4 APR 68	JJJ
N		REVISION STATUS CHANGED	28 JUN 68	JJJ
P		REVISION STATUS CHANGED	16 JUL 68	JJJ
R		REVISION STATUS CHANGED	14 AUG 68	
S		REVISION STATUS CHANGED	7 NOV 68	JJJ
T		REVISION STATUS CHANGED	15 NOV 68	JJJ
U		REVISION STATUS CHANGED	20 NOV 68	JJJ
V		REVISION STATUS CHANGED	4 FEB 69	RWH
W		REVISION STATUS CHANGED	15 APR 69	JJJ
Y		REVISION STATUS CHANGED	5 JUN 69	JJJ
Z		REVISION STATUS CHANGED	13 NOV 69	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER			END ITEM (DRAWING TITLE)
						PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	
1.0	Reduce Stray Light	0106008	ECP 160		10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
1.1	Reduce Stray Light	0106011	ECP 160	121	2	2011000 -000	8106024 -001	2011000 -001	OPTICAL UNIT ASSEMBLY
				20	9	1011000 -002 MOD 1	8106024 -002	1011000 -006	OPTICAL UNIT ASSEMBLY
					11	1011000 -004	8106024 -002	1011000 -007	OPTICAL UNIT ASSEMBLY
2	REWORK RETICLE FOR DOUBLE RETICLE, REWORK GAS VALVE AND INTERCHANGABLE SHIM	0106012	ECP 116	20	9	1011000 -002 MOD 1	8106032	1011000 -006	OPTICAL UNIT ASSEMBLY
3	SAME AS ITEM NO.2	0106016	ECP 83		11	1011000 -004	8106033	1011000 -007	OPTICAL UNIT ASSEMBLY
4	ADDED STIFFENING PLATES TO SXT & SCT ELECTRICAL CONNECTORS TO PREVENT POSSIBLE DEFLECTION AND LEAKS THROUGH CRACKS IN SOLDER JOINTS.	0106028	ECP 312		11	1011000 -004	8106039	1011000 -007	OPTICAL UNIT ASSEMBLY
5	ADDITIONAL BAFFLING CLOSER TO SCT PRISM, REDUCE EXTRANEOUS LIGHT. PERMIT TARGET DETECTION 20° CLOSER TO SUN THAN BEFORE.	0106026	ECP 123	101 110 111 102	3 5 6 4	2011000-011	8106038	N A	OPTICAL UNIT ASSEMBLY
6	REMOVE EYEPIECES FROM O.U.A. TO END ITEM REQUIREMENTS AND ADD QUICK DISCONNECT FEATURES TO O.U.A. TO ALLOW ASTRONAUTS TO CHANGE EYEPIECES WHILE WEARING HEAVY SPACE GLOVES	0106022	ECP 290 & 202	20	9	1011000-006	8106045-001	1011000-008	OPTICAL UNIT ASSEMBLY
				12	10	1011000-005		1011000-009	
				SP	11	1011000-007		1011000-010	
				121	2	2011000-001		2011000-002	
				109	5	2011000-011		2011000-012	
				111	6	2011000-011		2011000-012	
				122	7	2011000-022	8106045-002	2011000-024	
				SP	8	2011000-022		2011000-024	
				123	9	2011000-021		2011000-023	
				201A	011	2011000-031		2011000-033	
				201	012	2011000-031		2011000-033	
				1-201	014	2011000-032		2011000-034	
				202	013	2011000-032		2011000-034	
				203	015	2011000-032		2011000-034	
				204	016	2011000-036		2011000-034	
7	ADDITION OF WEDGES TO REDUCE SHIFTS	NA	ECP 453	OUA 201A 1-201(SPARE)	011 014	2011000-033 2011000-034	8106053	2011000-036 2011000-037	OPTICAL UNIT ASSEMBLY
8	ADDITION OF THERMOCOUPLES	N/A	ECP 301	OUA 207	023	2011000-061	8106060	2011000-062	OPTICAL UNIT ASSEMBLY
9	ADDS NEW SPRING AND COLLET ASSY	N/A	ECP 590	OUA 203	015	2011000-034	8106063	2011000-038	OPTICAL UNIT ASSEMBLY
				204	016	2011000-034		2011000-038	
				205	017	2011000-041		2011000-042	
				209	021	2011000-061		2011000-071	
				210	024	2011000-061		2011000-071	
10	REFURBISH TO A FORWARD-PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS AND NEW SPRING AND COLLET ASSY.	N/A	ECP 453, 475, 507 & 590	—	013	2011000-035	8106062	2011000-071	OPTICAL UNIT ASSEMBLY
11	REFURBISH 201A BY THE INCLUSION OF NEW SPRING AND COLLET ASSY. REBUILT GEAR BOXES AND HARNESS USING EPT MOTORS (1012156-1) AND CLEANING AND REALIGNMENT OF OPTICS AND PAINTING SXT AND SCT PANELS.	N/A	ECP ACSK-586	OUA 201A	011	2011000-036	8106063	2011000-039	OPTICAL UNIT ASSEMBLY

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN G. Fuller DATE 10/22/65
CHECKED A. BUCHOLZ 10/13/65
APPROVAL 10/21/65
APPROVAL
NASA APPROVAL 10/21/65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. 80230
SIZE D
NASA NUMBER 8106025
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 3

8106025 Z

Z 8106025

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER: PART NO. REF. MOD. FROM	RETROFIT KIT NO.	PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
12	RETROFIT TO A FORWARD PRODUCTION CONFIGURATION BY THE INCLUSION OF WEDGES, MANUAL ADJUST KNOB, NEW MOTOR TACHS	N/A	ECPS 453, 475 AND 507	204 205 206	015 016 017	2011000-058 2011000-058 2011000-042	8106074	2011000-071 2011000-071 2011000-071	OPTICAL UNIT ASSEMBLY
13	EYEPIECE REDESIGN	N/A	ECP 632	N/A	001 2001 2016 THRU 2021	2012691	8106070	2012790	LONG EYE RELIEF EYEPIECE ASSY (SCT)
					017, 018 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012719	8106079	2012793	SCT EYEPIECE ASSY (ADJUSTABLE FOCUSING
					019, 2001 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012699	8106071	2012791	SXT MIRROR HOUSING AND AIR FOCUSING SHIM ASSY
					022, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012677	—	2012775	SCT PRISM HOUSING, ASSY OF
					019	1013010	—	1013016	SCT PRISM HOUSING ASSY OF
14	ADDITION OF CHAMFER	N/A	ECP 475	OUA 1-201	014	2011000-037	8106077	2011000-037	OPTICAL UNIT ASSEMBLY
15	ADD LOCKWASHERS AND LONGER SCREW TO PROVIDE VIBRATION PROOF MOUNTING ARRANGEMENT IN EYEPIECE STOWAGE UNIT	0106053 (N/A FOR IN HOUSE RETROFIT)	ECP 706	N/A	018 2002 019 2003 2005 2004 2006 2009 2007 2010 2008 2012 2011 2013 2015 2014 2017 2016 2018 2020 2019 2022 2021 2023	2012700-000	8106084	2012700-011	SXT EYEPIECE
					2016 2020 2017 2021 2018 2022 2019	2012748-000		2012748-011	SXT LEA EYEPIECE
16	LIMIT STOP REDESIGN	0102701 (N/A FOR IN HOUSE RETROFIT)	ECP 724		013 014 015 016 017 018 020 021 025 026 028 029	2011000-037 2011000-071	8102782	2011000-037 2011000-081	OPTICAL UNIT ASSY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
J		THIS SHEET ADDED PER TDRR 35313		28 DEC 67	MTY
K		REVISED PER TDRR 35755	—	28 FEB 68	JJJ
L		REVISION STATUS CHANGED	-	2 APR 68	TK
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W		REVISION STATUS CHANGED		15 APR 69	JJJ
Y		REVISION STATUS CHANGED		5 JUN 69	JJJ
Z		REVISED PER TDRR 37908		13 [illegible] 69	

NEXT ASSY	USED ON
APPLICATION	

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INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO. CONTRACT
DRAWN G. FULLER DATE 10/12/65
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SIZE D
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SHEET 2 OF 3

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ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	DRAWING NUMBER PART NO. REF. MOD. FROM	DRAWING NUMBER RETROFIT KIT NO.	DRAWING NUMBER PART NO. REF. MOD. TO	END ITEM (DRAWING TITLE)
17	ADDITION OF STAINLESS STEEL SPRING AND DESIGN IMPROVEMENT TO REDUCE INSTALLATION TORQUE	N/A	ECP 702	N/A	32 SETS	1022780-011 1022781-011	8106087	2012796-021 2012797-011	SEXTANT AND TELESCOPE COVER ASSEMBLY
					32 SETS	2012796-011 2012797-011	8106083	2012796-021 2012797-021	
18	DESIGN IMPROVEMENT TO REDUCE BINDING AT EYEPIECE AND HOUSING INTERFACE	N/A	ECP 753	N/A	2001, 2002, 2004 THRU 2009, 2011, 2014 THRU 2023	2012791-000	8106088	2012791-011	SXT. MIRROR HOUSING AND FOCUSSING SHIM ASSEMBLY
19	TO AFFORD ASTRONAUT WITH SUN VIEWING CAPABILITIES	0106055	ECP 752	N/A	QTY 10 UNITS	2012790-000	8106089	2012790-011	LONG EYE RELIEF EYEPIECE ASSEMBLY (SCT)
20	KNOB REDESIGN TO IMPROVE LOCKING METHOD	N/A	ECP 773	-	002	2013250-000	8106092	201325C-011	APOLLO RANGE FINDER
21	COMPLETE REFURBISHMENT OF 121 TO LATEST BLOCK II CONFIGURATION (-081)	N/A	ECP 663	-	2	2011000-002	8106090	2011000-081	OPTICAL UNIT ASSEMBLY
22	TO PROVIDE LOCKING RINGS TO SXT AND SCT EYEPIECE ASSEMBLY TO PREVENT THE BACKING OFF OF EYEGUARD ASSEMBLIES DURING WEIGHTLESSNESS	0106058	ECP 795 CCA 497 -0632	APOLLO II AND SUBS	QTY-15 KITS	2012793-000	8106094	2012793-011	SCT STANDARD (ADJUSTABLE) EYEPIECE ASSEMBLY
		0106059			QTY-15 KITS	2012700-011	8106095	2012700-021	SXT EYEPIECE ASSEMBLY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
R		THIS SHEET ADDED PER TDRR 36669		14 Aug 68	
S		REVISION STATUS CHANGED		7 NOV 68	JJJ
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Z		REVISED PER TDRR 37908		13 NOV 69	

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SHEET 3 OF 3

REVISIONS 23 359				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO.	AUTHORITY & DATE	EFFECT-IVITY G&N	SERIAL NO.	DRAWING NO.			DRAWING TITLE
						PART NO. MOD. FROM	RETROFIT KIT NO.	PART NO. MOD. TO	
1	Reduce Stray Light	0106008	CCA 497/0063 & ECP 88 20/8/65	17	10	1011000-003	8106012	1011000-005	OPTICAL UNIT ASSEMBLY
2	Reduce Stray Light	0106011	ECP 166 30/9/65	121	2	2011000-000	8106024	2011000-001	OPTICAL UNIT ASSEMBLY

MASTER

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	+ −	+ −	+ −

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN

DRAWN D. Fuller DATE 10/7/65
CHECKED A. BUCHOLZ 10/15/65
APPROVAL [illegible] 10/21/65
APPROVAL E. Thoup 10/21/65
NASA APPROVAL W. Michel 11/4/65
MIT APPROVAL M G Weakley 10-21-65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
G & N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106025

SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 1

E-190

NOTE:
1. INTERPRET DWG PER MIL-D-70327.

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
—	—	INITIAL RELEASE CL. A TDRR 25633 DATE 1-25-66		

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT
3	2		1004260-307			PLATE, IDENTIFICATION			
2	1		0106009			RETROFIT INSTRUCTION BULLETIN			
1	1		1019554-001			RETAINER, ELECTRICAL CONNECTOR			

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8106001	8106001

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± ~	± ~	± ~

DO NOT SCALE THIS DRAWING

MATERIAL ~

CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN

DRAWN L.P. Demas DATE 10-4-65
CHECKED N. Mazza 10-6-65
APPROVAL 10-4-65
APPROVAL

NASA APPROVAL A. C. METZGER
MIT APPROVAL 1-25-66

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE RETROFIT KIT DRAWING FOR
S/H SIMULATOR CERTIFICATION FIX.
1019970-021

CODE IDENT NO.	SIZE	NASA NUMBER
89944	C	8106028

SCALE ~ WEIGHT CALC ACTUAL SHEET 1 OF 1

MASTER

AD-1340

NOTE:-

1-INTERPRET DWG PER MIL-D-70327

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
—		INITIAL RELEASE CLASS N PER TDRR 25646 DATE		

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT
11	1		1022984			CABLE ASSY (W320)			
10	1		1022983			CABLE ASSY (W319)			
9	1		1022982			CABLE ASSY (W318)			
8	1		0106018			RETROFIT INSTRUCTION BULLETIN			
7	4		1001722-13			CAPACITOR			
6	4		1001722-9			CAPACITOR			
5	1		MIL-W-3861, TYPE "S", AWG22			WIRE, BARE (3" LONG)			
4	2		1019129-001			PLATE, IDENTIFICATION			
3	1		1004260-304			PLATE, IDENTIFICATION			
2	1		1019096-002			PLATE, IDENTIFICATION			
1	1		1022607			PLATE, MODIFICATION			

LIST OF PARTS AND MATERIALS

8106001	1000000
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN H.E.BOLD DATE 12-8-65
CHECKED H. DEBONIS 12-9-65
APPROVAL 1/14/66
APPROVAL
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR
FUNCTIONAL TESTER (1016949-021)

CODE IDENT NO. 89944
SIZE C
NASA NUMBER 8106031
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF 1

Cable missing

MASTER

AD-1340

NOTES:
1. INTERPRET DRAWING PER MIL-D-70327.
2. SERIALIZE PER ND 1002023.

REVISIONS

SYM	ZONE	DESCRIPTION	DATE
—	—	INITIAL RELEASE CLASS A PER TDRR XX756	

ITEM NO.	QTY REQD -011	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT
34	1		1022623			PLATE, GUIDE			
33	1					CRIMPING TOOL FOR FERRULES			
32	1					"C" CLAMP TYPE SWAGING TOOL			
31	1					"C" CLAMP TYPE PRESSING TOOL			
30	1		ESNA*CP516			5/16 PUNCH TOOL (FOR CLINCH NUT)			
29	1		CD516			5/16 DOLLY TOOL (FOR CLINCH NUT)			
28	1		CP6			*6 PUNCH TOOL (FOR CLINCH NUT)			
27	1		CD6			*6 DOLLY TOOL (FOR CLINCH NUT)			
26	1		CP8-10			*10 PUNCH TOOL (FOR CLINCH NUT)			
25	1		ESNA*CD10			*10 DOLLY TOOL (FOR CLINCH NUT)			
24									
23	1		0106020			RETROFIT INSTRUCTION BULLETIN (RIB)			
22	1		0106019			RETROFIT INSTRUCTION BULLETIN (RIB)			
21	8		MS35240-72			SCREW, FLATHEAD SLOTTED			
20	4		1001672			CABLE			
19	12		1001681-2			NUT, CLINCH, SELF-LOCKING			
18	6		1001681-3			NUT, CLINCH, SELF-LOCKING			
17	1		1001681-4			NUT, CLINCH, SELF-LOCKING			
16	11		1001681-1			NUT, CLINCH, SELF-LOCKING			
15	1		1019693-001			PLATE, IDENTIFICATION			
14	1		1019694-001			PLATE, IDENTIFICATION			
13	4		AN960-C10L			WASHER, PLAIN			
12	4		1016151-010			NUT, SELF-LOCKING			
11	4		1022621			SCREW, SHOULDER			
10	1		1022622			PLATE, GUIDE			
9	1		1022578			CHART, CONFIGURATION			
8	1		1022577			CHART, CONFIGURATION			
7	1		1022997-011			BLOCK AND CLAMP ASSEMBLY			
6	1		1022778-011			BLOCK AND CLAMP ASSEMBLY			
5	1		1022998-011			BLOCK AND CLAMP ASSEMBLY			
4	1		1022775-011			BLOCK AND CLAMP ASSEMBLY			
3	1		1022996-011			BLOCK MOUNTING ASSEMBLY			
2	2		1016151-006			NUT, SELF-LOCKING			
1	1		1897338-003			RECORDER, SHOCK			

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8106001	100000

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN L.P. DEMAS DATE 1-20-66
CHECKED N. MAZZA 1-20-66
APPROVAL 1-20-66
APPROVAL
A. C. METZGER
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR OPTICS NAV BASE SHIPPING CONTAINER (1019720-011)

CODE IDENT NO. 89944
SIZE D
NASA NUMBER 8106034
SCALE ~
WEIGHT CALC ACTUAL
SHEET 1 OF

MASTER

8106034

8106046

REVISIONS 30807				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

NEW MATERIAL REQUIRED FOR 8106046

ITEM NO.	QTY REQ'D	PART NO.	DESCRIPTION
1	1	0106033	RETROFIT INSTRUCTION BULLETIN
2	1	6011143	STRAIN ISOLATION, PRESSURE SEAL
3	1	1004260-350	PLATE, IDENTIFICATION

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

8106048	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON: FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL W. Chan 7-1-66
APPROVAL E. Mayo 8/9/66
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR ECP 353F
ALIGNMENT OPTICAL TELESCOPE

CODE IDENT NO.
SIZE C
NASA NUMBER 8106046
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 1

8106046

AD-1340

8106046

REVISIONS 30807				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

NEW MATERIAL REQUIRED FOR 8106046

ITEM NO.	QTY REQ'D	PART NO.	DESCRIPTION
1	1	0106033	RETROFIT INSTRUCTION BULLETIN
2	1	6011143	STRAIN ISOLATION, PRESSURE SEAL
3	1	1004260-350	PLATE, IDENTIFICATION

8106046

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8106048	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

	FRACTIONS	DECIMALS	ANGLES
TOL ON	+ −	+ −	+ −

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN

DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL U. Chan 7-1-66
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR ECP 353F
ALIGNMENT OPTICAL TELESCOPE

CODE IDENT NO.
SIZE C
NASA NUMBER 8106046
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 1

AD-1340

8106048 A

REVISIONS 30821				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR NO. 32660	2-1-67	6.C

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
1	CHANGE OF PRESSURE SEAL MATERIAL TO MEET STRENGTH & DURABILITY REQUIREMENTS	0106033	ECP353F CCA497-0237C	602	8	6011000-011	8106046	6011000-012	ALIGNMENT OPTICAL TELESCOPE
2	ADDITION OF SHIELD TO BLOCK OUT RADAR ANTENNA FROM THE AOT FIELD OF VIEW	0106039	ECP 473 CCA497-0347	605 606 607 608	11 12 13 14	6011000-041 6011000-051 6011000-051 6011000-051	8106051	6011000-042 6011000-061 6011000-061 6011000-061	ALIGNMENT OPTICAL TELESCOPE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

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MATERIAL

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK

KIC
PN

DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL W. Chen 7-1-66
APPROVAL E. [illegible] 8/19/66
NASA APPROVAL
MIT APPROVAL 8/9

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.	SIZE	NASA NUMBER
	D	8106048

SCALE | WEIGHT CALC ACTUAL | SHEET 1 OF 1

8106048 A

AD-1300

8106048 B

REVISIONS 3082

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR NO. 32660	2-1-67	L.C
B		REVISED PER TDRR NO. 34098	6-30-67	L.C

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY GEN	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
1	CHANGE OF PRESSURE SEAL MATERIAL TO MEET STRENGTH & DURABILITY REQUIREMENTS	0106033	ECP353F CCA497-0237C	602	8	6011000-011	8106046	6011000-012	ALIGNMENT OPTICAL TELESCOPE
2	ADDITION OF SHIELD TO BLOCK OUT RADAR ANTENNA FROM THE AOT FIELD OF VIEW	0106039	ECP 473 CCA497-034-T	605 606 607 608	11 12 13 14	6011000-041 6011000-051 6011000-051 6011000-051	8106051	6011000-042 6011000-061 6011000-061 6011000-061	ALIGNMENT OPTICAL TELESCOPE
3	1. ADDITION OF PLUG TO EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW b) TO ELIMINATE COUNTER CORROSION c) TO PROVIDE LIGHT ILLUMINATION ON COUNTER READOUT	N/A (IN HOUSE RETROFIT)	ECP 542 ECP 539 ECP 540F ECP 543F CCA 497-0430R2	611	17	6011000-061	8106058	6011000-071	ALIGNMENT OPTICAL TELESCOPE

8106043 B

ITEM NO	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN R. BRUNELLE DATE 6-29-66
CHECKED
APPROVAL 7-1-66
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106048
SCALE
WEIGHT CALC ACTUAL
SHEET OF 1

D 8106048

REVISIONS 30821				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR NO. 32660	2-1-67	LC
B		REVISED PER TDRR NO. 34098	6-30-67	LC
C		REVISED PER TDRR NO. 34707	10-20-67	WC
D		REVISED PER TDRR 34957	NOV 30 67	URK

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
1	CHANGE OF PRESSURE SEAL MATERIAL TO MEET STRENGTH & DURABILITY REQUIREMENTS	0106033	ECP353F CCA497-0237C	602	8	6011000-011	8106046	6011000-012	ALIGNMENT OPTICAL TELESCOPE
2	ADDITION OF SHIELD TO BLOCK OUT RADAR ANTENNA FROM THE AOT FIELD OF VIEW	0106039	ECP 473 CCA497-034T	605 606 607 608	11 12 13 14	6011000-041 6011000-051 6011000-051 6011000-051	8106051	6011000-042 6011000-061 6011000-061 6011000-061	ALIGNMENT OPTICAL TELESCOPE
3	1. ADDITION OF PLUG TO EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4 a) TO ELIMINATE FOGGING COUNTER WINDOW b) TO ELIMINATE COUNTER CORROSION c) TO PROVIDE LIGHT ILLUMINATION ON COUNTER READOUT	N/A (IN HOUSE RETROFIT)	ECP 542 ECP 539 ECP 540F ECP 543F CCA 497-0430R2 CCA497-0509 (ECP-664)	611 606 610	17 12 16	6011000-061 6011000-061 6011000-061	8106058	6011000-071 6011000-071 6011000-071	ALIGNMENT OPTICAL TELESCOPE
4	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIG'S. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING. 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION. 5. TO INCORPORATE LONG EYE RELIEF FEATURE	N/A (IN HOUSE RETROFIT)	ECP 421 ECP 542 ECP 539 ECP 540F ECP 543F CCA 497-0430	604	10	6011000-031	8106067	6011000-032	ALIGNMENT OPTICAL TELESCOPE
5	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING. 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION.	N/A (IN HOUSE RETROFIT)	ECP 542 ECP 539 ECP 540F ECP 543F CCA 497-0430	607 608 609	13 14 15	6011000-061 6011000-061 6011000-061	8106066	6011000-062 6011000-062 6011000-062	ALIGNMENT OPTICAL TELESCOPE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	+ −	+ −	+ −

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN R.BRUNELLE DATE 6-29-66
CHECKED
APPROVAL 7-1-66
APPROVAL E. Vincent
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106048
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 1

AD-1300

8106048 D

E 8106048

REVISIONS 30821				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR NO. 32660	2-1-67	LC
B		REVISED PER TDRR NO. 34098	6-30-67	LC
C		REVISED PER TDRR NO. 34707	10-20-67	WC
D		REVISED PER TDRR 34957	NOV 30 67	URK
E		REVISION STATUS CHANGED	DEC 67	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
1	CHANGE OF PRESSURE SEAL MATERIAL TO MEET STRENGTH & DURABILITY REQUIREMENTS	0106033	ECP353F CCA497-0237C	602	8	6011000-011	8106046	6011000-012	ALIGNMENT OPTICAL TELESCOPE
2	ADDITION OF SHIELD TO BLOCK OUT RADAR ANTENNA FROM THE AOT FIELD OF VIEW	0106039	ECP 473 CCA497-0347	605 606 607 608	11 12 13 14	6011000-041 6011000-051 6011000-051 6011000-051	8106051	6011000-042 6011000-061 6011000-061 6011000-061	ALIGNMENT OPTICAL TELESCOPE
3	1. ADDITION OF PLUG TO EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW b) TO ELIMINATE COUNTER CORROSION c) TO PROVIDE LIGHT ILLUMINATION ON COUNTER READOUT	N/A (IN HOUSE RETROFIT)	ECP 542 ECP 539 ECP 540F ECP 543F CCA 497-0430R2 CCA497-0509 (ECP-664)	611 606 610	17 12 16	6011000-061 6011000-061 6011000-061	8106058	6011000-071 6011000-071 6011000-071	ALIGNMENT OPTICAL TELESCOPE
4	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIG'S. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION. 5. TO INCORPORATE LONG EYE RELIEF FEATURE	N/A (IN HOUSE RETROFIT)	ECP 421 ECP 542 ECP 539 ECP 540F ECP 543F CCA 497-0430	604	10	6011000-031	8106067	6011000-032	ALIGNMENT OPTICAL TELESCOPE
5	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING. 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION.	N/A (IN HOUSE RETROFIT)	ECP 542 ECP 539 ECP 540F ECP 543F CCA 497-0430	607 608 609	13 14 15	6011000-061 6011000-061 6011000-061	8106066	6011000-062 6011000-062 6011000-062	ALIGNMENT OPTICAL TELESCOPE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL 7-1-66
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106048
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 2

AD-1300

E 8106048

REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APPD
E		THIS SHEET ADDED PER TDRR 35590	CHG NO	DEC	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY AOT	SERIAL NO.	(REF) PART NO. REF. MOD. FROM	RETROFIT KIT NO.	(REF) PART NO. REF. MOD. TO	END ITEM
6	1) ADDITION OF AOT HEATER INSULATOR AND LAMP ASSY. SHIELD. 2) PRESENT SEAL MATERIAL WILL BURN IN 100 PERCENT OXYGEN ENVIRONMENT. METALLIC ENVELOPE AROUND SEAL WILL PREVENT THIS HAZARD.	N/A IN N/A HOUSE N/A RETRO- N/A FIT 0106049 0106049	ECP. 0633	606 607 608 609 610 611	12 13 14 15 16 17	6011000-071 6011000-062 6011000-062 6011000-062 6011000-071 6011000-071	8106069 8106069 8106069 8106069 8106069 8106069	6011000-081 6011000-081 6011000-081 6011000-081 6011000-081 6011000-081	ALIGNMENT OPTICAL TELESCOPE
7	ADDITION OF AOT HEATER INSULATOR AND LAMP ASSY. SHIELD	0106048	ECP-0633	612	18	6011000-071	8106073	6011000-072	ALIGNMENT OPTICAL TELESCOPE

E THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± —
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
PN
DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL W. CHIN 7-1-66
CONTRACT
NASA APPROVAL W. S. S.
MIT APPROVAL G J B

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

LEM G&N MASTER
RETROFIT KIT LIST

SIZE	CODE IDENT NO	
D	89944	8106048
SCALE NONE		SHEET 2 OF 2

8106048

8106048 F

REVISIONS 35821				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR NO. 32660	2-1-67	WC
B		REVISED PER TDRR NO. 34098	6-30-67	WC
C		REVISED PER TDRR NO. 34707	10-20-67	WC
D		REVISED PER TDRR 34957	NOV 30 67	URK
E		REVISION STATUS CHANGED	DEC 67	
F		REVISED PER TDRR 36025	APR 68	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
1	CHANGE OF PRESSURE SEAL MATERIAL TO MEET STRENGTH & DURABILITY REQUIREMENTS	0106033	ECP353F	602	8	6011000-011	8106046	6011000-012	ALIGNMENT OPTICAL TELESCOPE
2	ADDITION OF SHIELD TO BLOCK OUT RADAR ANTENNA FROM THE AOT FIELD OF VIEW	0106039	ECP 473	605 606 607 608	11 12 13 14	6011000-041 6011000-051 6011000-051 6011000-061	8106051	6011000-042 6011000-061 6011000-061 6011000-061	ALIGNMENT OPTICAL TELESCOPE
3	1. ADDITION OF PLUG TO EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW b) TO ELIMINATE COUNTER CORROSION c) TO PROVIDE LIGHT ILLUMINATION ON COUNTER READOUT	N/A	ECP 551 ECP 542 ECP 539 ECP 540F ECP 543F	611 606 610	17 12 16	6011000-061 6011000-061 6011000-061	8106058	6011000-071 6011000-071 6011000-071	ALIGNMENT OPTICAL TELESCOPE
4	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAYLIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIG'S. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION. 5. TO INCORPORATE LONG EYE RELIEF FEATURE	N/A	ECP 551 ECP 421 ECP 542 ECP 539 ECP 540F ECP 543F	604	10	6011000-031	8106067	6011000-032	ALIGNMENT OPTICAL TELESCOPE
5	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING. 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION.	N/A	ECP 551 ECP 542 ECP 539 ECP 540F ECP 543F	607 608 609	13 14 15	6011000-061 6011000-061 6011000-061	8106066	6011000-062 6011000-062 6011000-062	ALIGNMENT OPTICAL TELESCOPE

ITEM NO	QTY REQD	SYM	GOVERNMENT/NASA NO	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED
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TOL ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PR
DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL 7-1-66
APPROVAL
NASA APPROVAL
MIT APPROVAL

NEXT ASSY | USED ON
APPLICATION

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO
SIZE D
NASA NUMBER 8106048
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 2

8106048 F

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		THIS SHEET ADDED PER TDRR 35190		11 DEC	RWH
F		REVISION STATUS CHANGED		8 APR 68	

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY AOT	SERIAL NO.	(REF) PART NO. REF. MOD. FROM	RETROFIT KIT NO.	(REF) PART NO. REF. MOD. TO	END ITEM
6	1) ADDITION OF AOT HEATER INSULATOR AND LAMP ASSY. SHIELD. 2) PRESENT SEAL MATERIAL WILL BURN IN 100 PERCENT OXYGEN ENVIRONMENT, METALLIC ENVELOPE AROUND SEAL WILL PREVENT THIS HAZARD.	N/A IN	ECP. 0633	606	12	6011000-071	8106069	6011000-081	ALIGNMENT OPTICAL TELESCOPE
		N/A HOUSE		607	13	6011000-062	8106069	6011000-081	
		N/A RETRO-		608	14	6011000-062	8106069	6011000-081	
		N/A FIT		609	15	6011000-062	8106069	6011000-081	
		0106049		610	16	6011000-071	8106069	6011000-081	
		0106049		611	17	6011000-071	8106069	6011000-081	
7	ADDITION OF AOT HEATER INSULATOR AND LAMP ASSY. SHIELD	0106048	ECP-0633	612	18	6011000-071	8106073	6011000-072	ALIGNMENT OPTICAL TELESCOPE

E THIS SHEET ADDED

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KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL W. CHIN 7-1-66
CONTRACT
NASA APPROVAL W. S. S.
MIT APPROVAL G.J.B.

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

LEM G&N MASTER
RETROFIT KIT LIST

SIZE D
CODE IDENT NO 89944
8106048
SCALE NONE
SHEET 2 OF 2

8106048 G

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR NO. 32660	2-1-67	WC
B		REVISED PER TDRR NO. 34098	6-30-67	WC
C		REVISED PER TDRR NO. 34707	10-20-67	WC
D		REVISED PER TDRR 34957	NOV 30 67	JRK
E		REVISION STATUS CHANGED	DEC 67	
F		REVISED PER TDRR 36025	APR 68	
G		REVISION STATUS CHANGED	18 APR 68	JJJ

REVISIONS 30721

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY GEN	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
1	CHANGE OF PRESSURE SEAL MATERIAL TO MEET STRENGTH & DURABILITY REQUIREMENTS	0106033	ECP353F	602	8	6011000-011	8106046	6011000-012	ALIGNMENT OPTICAL TELESCOPE
2	ADDITION OF SHIELD TO BLOCK OUT RADAR ANTENNA FROM THE AOT FIELD OF VIEW	0106039	ECP 473	605 606 607 608	11 12 13 14	6011000-041 6011000-051 6011000-051 6011000-051	8106051	6011000-042 6011000-061 6011000-061 6011000-061	ALIGNMENT OPTICAL TELESCOPE
3	1. ADDITION OF PLUG TO EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT 2 ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4 a) TO ELIMINATE FOGGING COUNTER WINDOW b) TO ELIMINATE COUNTER CORROSION c) TO PROVIDE LIGHT ILLUMINATION ON COUNTER READOUT	N/A	ECP 551 ECP 542 ECP 539 ECP 540F ECP 543F	611 606 610	17 12 16	6011000-061 6011000-061 6011000-061	8106058	6011000-071 6011000-071 6011000-071	ALIGNMENT OPTICAL TELESCOPE
4	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIG'S. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION. 5. TO INCORPORATE LONG EYE RELIEF FEATURE	N/A	ECP 551 ECP 421 ECP 542 ECP 539 ECP 540F ECP 543F	604	10	6011000-031	8106067	6011000-032	ALIGNMENT OPTICAL TELESCOPE
5	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING. 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION.	N/A	ECP 551 ECP 542 ECP 534 ECP 540F ECP 543F	607 608 609	13 14 15	6011000-061 6011000-061 6011000-061	8106066	6011000-062 6011000-062 6011000-062	ALIGNMENT OPTICAL TELESCOPE

8106048

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN R. BRUNELLE DATE 6-28-66
CHECKED
APPROVAL 7-1-66
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106048
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		THIS SHEET ADDED PER TDRR 36190		DEC.	RWH
F		REVISION STATUS CHANGED		8 APR 68	
G		REVISED PER TDRR 36087		APR 68	JJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY AOT	SERIAL NO.	(REF) PART NO. REF. MOD. FROM	RETROFIT KIT NO.	(REF) PART NO. REF. MOD. TO	END ITEM
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		0106049		611	17	6011000-071	8106069	6011000-081	
7	ADDITION OF AOT HEATER INSULATOR AND LAMP ASSY. SHIELD	0106048	ECP-0633	612	18	6011000-071	8106073	6011000-072	ALIGNMENT OPTICAL TELESCOPE
8	ADDITIONS OF NEW SUNSHADE AND CALIBRATION CHART	0106050	ECP-637	606-611, 613-617	12-17 19-23	6011000-081	8106076	6011000-091	ALIGNMENT OPTICAL TELESCOPE
		0106050		612	18	6011000-072	8106076	6011000-073	

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RETROFIT KIT LIST

SIZE D
CODE IDENT NO 89944
8106048
SCALE NONE
SHEET 2 OF 2

H 8106048

REVISIONS 30821

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
A		REVISED PER TDRR NO. 32660	2-1-67	L.C
B		REVISED PER TDRR NO. 34098	6-30-67	L.C
C		REVISED PER TDRR NO. 34707	10-30-67	W.C.
D		REVISED PER TDRR 34957	NOV 30 67	URK
E		REVISION STATUS CHANGED	DEC 67	
F		REVISED PER TDRR 36025	8 APR 68	
G		REVISION STATUS CHANGED	18 APR 68	JJJ
H		REVISION STATUS CHANGED	17 JUL 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY G&N	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
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2	ADDITION OF SHIELD TO BLOCK OUT RADAR ANTENNA FROM THE AOT FIELD OF VIEW	0106039	ECP 473	605 606 607 608	11 12 13 14	6011000-041 6011000-051 6011000-051 6011000-051	8106051	6011000-042 6011000-061 6011000-061 6011000-061	ALIGNMENT OPTICAL TELESCOPE
3	1. ADDITION OF PLUG TO EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW b) TO ELIMINATE COUNTER CORROSION c) TO PROVIDE LIGHT ILLUMINATION ON COUNTER READOUT	N/A	ECP 551 ECP 542 ECP 539 ECP 540F ECP 543F	611 606 610	17 18 16	6011000-061 6011000-061 6011000-061	8106058	6011000-071 6011000-071 6011000-071	ALIGNMENT OPTICAL TELESCOPE
4	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIG'S. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION. 5. TO INCORPORATE LONG EYE RELIEF FEATURE	N/A	ECP 551 ECP 421 ECP 542 ECP 539 ECP 540F ECP 543F	604	10	6011000-031	8106067	6011000-032	ALIGNMENT OPTICAL TELESCOPE
5	1. ADDITION OF PLUG OF EYEGUARD ASSEMBLY TO ELIMINATE EXTERNAL STRAY LIGHT. 2. ADDITION OF RETICLE EDGE LIGHTING WITH RED ILLUMINATION FOR EASE OF POSSIBLE ISOLATION OF STAR SOURCE VERSUS RETICLE TITANIUM FILLED DIGS. 3. TO INTRODUCE A DRAG ON COUNTER KNOB FOR REDUCING ACCIDENTAL MOVEMENT OF READING. 4. a) TO ELIMINATE FOGGING COUNTER WINDOW. b) TO ELIMINATE COUNTER CORROSION. c) TO PROVIDE LIGHT ILLUMINATION.	N/A	ECP 551 ECP 542 ECP 539 ECP 540F ECP 543F	607 608 609	13 14 15	6011000-061 6011000-061 6011000-061	8106066	6011000-062 6011000-062 6011000-062	ALIGNMENT OPTICAL TELESCOPE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY | USED ON

APPLICATION

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CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN R. BRUNELLE DATE 6-23-66
CHECKED
APPROVAL 7-1-66
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO. | SIZE D | NASA NUMBER 8106048

SCALE | WEIGHT CALC ACTUAL | SHEET 1 OF 2

8106048

H 8106048 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		THIS SHEET ADDED PER TDRR 35190		DEC.	
F		REVISION STATUS CHANGED		8 APR 68	
G		REVISED PER TDRR 36087		18 APR 68	JJJ
H		REVISED PER TDRR 36480		17 JUL 68	JJJ

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY AOT	SERIAL NO.	(REF) PART NO. REF. MOD. FROM	RETROFIT KIT NO.	(REF) PART NO. REF. MOD. TO	END ITEM
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7	ADDITION OF AOT HEATER INSULATOR AND LAMP ASSY. SHIELD	0106048	ECP-0633	612	18	6011000-071	8106073	6011000-072	ALIGNMENT OPTICAL TELESCOPE
8	ADDITIONS OF NEW SUNSHADE AND CALIBRATION CHART	0106050	ECP-637	606-611, 613-617	12-17 19-23	6011000-081	8106076	6011000-091	ALIGNMENT OPTICAL TELESCOPE
		0106050		612	18	6011000-072	8106076	6011000-073	
9	ADDITION OF WIRE SHIELD PROTECTOR	0106054	ECP-697	606-611 613-618	12-17 19-24	6011000-091	8106085	6011000-111	ALIGNMENT OPTICAL TELESCOPE
		0106054	ECP-697	612	18	6011000-073	8106085	6011000-074	ALIGNMENT OPTICAL TELESCOPE

E THIS SHEET ADDED

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RETROFIT KIT LIST

SIZE D
CODE IDENT NO 89944
8106048
SCALE NONE
SHEET 2 OF 2

8106048

8106048

REVISIONS 30821				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

ITEM NO.	DESCRIPTION OF CHANGE	RIB NO. (REF)	AUTHORITY	EFFECTIVITY GEN	SERIAL NO.	(REF) PART NO. REF MOD FROM	RETROFIT KIT NO.	(REF) PART NO. REF MOD TO	END ITEM
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8106048

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

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	+ −	+ −	+ −

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MATERIAL

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN

DRAWN R. BRUNELLE DATE 6-28-66
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APPROVAL 7-1-66
APPROVAL E. Thompson 7/1/66
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
LEM G&N MASTER
RETROFIT KIT LIST

CODE IDENT NO.
SIZE D
NASA NUMBER 8106048
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF

AD-1300

8106058

REVISIONS TDRR 34099

SYM	ZONE	DESCRIPTION	DATE	APPROVAL

NEW MATERIAL REQUIRED FOR 8106058

ITEM NO.	QTY REQ'D	PART NO.	DESCRIPTION
1	1	1004260-350	PLATE, IDENTIFICATION
2	1	6011190	KNOB, RETICLE CONTROL
3	1	6011191	SPRING
4	1	6011192	SPRING RETAINER
5	1	6011193	SCREW
6	1	6011194	RING, ADAPTER
7	1	6011195	RING, SPLIT
8	1	6011214	RING, RETAINING
9	2	MS35233-1	SCREW, PAN HD
10	AR	1012051	SILICONE GREASE
11	AR	1011541-1	BASE (RESIN B)
12	AR	1011541-2	HARDENER (ACCELERATOR)
13	1	6011188	PLUG, EYEGUARD
14	1	6011843-021	PLATE AND LAMPS ASSY
15	1	6011862	PLATE, COUNTER MOUNTING, ASSY OF
16	1	6011863	COVER, COUNTER, ASSY OF
17	3	6011201	CLAMP, COUNTER
18	1	1011768-37	PACKING, PREFORMED
19	1	1011625-28	SCREW, CAP, HEX SOC HD, SELF LOCKING
20	2	1000093-13	SCREW, BUTTON HD, SELF LOCKING
21	3	NAS1598C04Y	STAT-O-SEAL
22	4	1017418-9	SCREW, CAP, SOC HD
23	2	1010911-042	INSULATION, SLEEVING, ELECTRICAL
24	2	1010711-1	SPLICE, ELECTRICAL, PERMANENT, LAP CRIMP
25	AR	1012515	COMPOUND, POTTING, SILICONE RUBBER
26	AR	1012514	CATALYST
27	AR	1012513	PRIMER, SILICONE
28	1	1010789-001	WIRE, ELECTRICAL (APPROX 36" LG)
29	1	1010789-002	WIRE, ELECTRICAL (APPROX 36" LG)
30	1	6011865	CABLE ASSY AOT
31	7	1010770-1	CONTACT, CRIMP TYPE, #22 (PIN)

8106058

REFER TO MASTER RETROFIT KIT DRAWING 8106048 FOR PRE- AND POST MODIFICATION OF AFFECTED HARDWARE

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
	8106048

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± —	± —	± —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN

DRAWN R. BRUNELLE DATE 6-5-67
CHECKED [illegible] 6/6/67
APPROVAL [illegible] 6/7/67
APPROVAL [illegible]
NASA APPROVAL
APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR ECP
ALIGNMENT OPTICAL TELESCOPE

CODE IDENT NO.
SIZE D
NASA NUMBER 8106058
SCALE —
WEIGHT
CALC
ACTUAL
SHEET OF

AD-1000

6909018

REVISIONS TORR 35192				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

NEW MATERIAL REQUIRED FOR 8106069

ITEM NO.	QTY REQD	PART NO.	DESCRIPTION
* 1	1	0106049	RETROFIT INSTRUCTION BULLETIN
2	1	6011869	BELLOWS ASSY, PRESSURE SEAL FLAMEGUARD
3	1	6011227-1	RING, SPLIT
4	6	NAS1352C02LL3	SCREW, CAP, SOCKET HD, SELF LOCKING
5	AR	1012545-001	INK, MARKING, BLACK ✓
6	AR	1012545-010	INK, MARKING, WHITE ✓
7	AR	1012546-006	CATALYST, MARKING INK ✓
8	AR	1008937-003	TAPE, PRESSURE SENSITIVE, ADHESIVE
9	1	6011230	COVER, PROTECTIVE, LAMP ASSY ✓
10	1	6011231	COVER, PROTECTIVE, HEATER ✓
11	2	NAS1190C04P4L	SCREW, SELF LOCKING, PAN HD ✓
12	1	6011239	GROMMET ✓
13	AR	1008937-007	TAPE, PRESSURE SENSITIVE, ADHESIVE
14	AR	1008936-003	TAPE, LACING & TYING, BRAIDED FIBERGLASS
15	1	6011227-2	RING, SPLIT

8106069

* NOT APPLICABLE FOR SUB-CONTRACTOR IN-HOUSE RETROFIT

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
	8106048

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	+ —	+ —	+ —

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN R. BRUNELLE DATE 10-4-67
CHECKED
APPROVAL W. Chris 11/29/67
MIT APPROVAL E. Thomp 11/30/67
NASA APPROVAL
APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR ECP-633
ALIGNMENT OPTICAL TELESCOPE

CODE IDENT NO.	SIZE	NASA NUMBER
80230	C	8106069

SCALE — WEIGHT CALC ACTUAL SHEET 1 OF 1

AD-1340

11/20/72
11/22/72 11/13/72

8106073

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
—	—	INITIAL RELEASE CLASS AS PER TDRR 35792	1 DEC 67	

NEW MATERIAL REQUIRED FOR 8106073

ITEM NO.	QTY REQ'D	PART NO.	DESCRIPTION
* 1	1	0106048	RETROFIT INSTRUCTION BULLETIN
2	AR	1012545-001	INK, MARKING, BLACK
3	AR	1012545-010	INK, MARKING, WHITE
4	AR	1012546-006	CATALYST, MARKING INK
5	1	6011230	COVER, PROTECTIVE, LAMP ASSY
6	1	6011231	COVER, PROTECTIVE, HEATER
7	2	NAS1190C04P4L	SCREW, SELF LOCKING, PAN HD.
8	1	6011239	GROMMET

* NOT APPLICABLE FOR SUBCONTRACTOR IN-HOUSE RETROFIT

8106073

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN
DRAWN C.SAGONA DATE 10-18-67
CHECKED
APPROVAL 11/29/67
MIT APPROVAL E. Morris 11/30/67
NASA APPROVAL
APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR ECP
-0633
ALIGNMENT OPTICAL TELESCOPE

CODE IDENT NO. 80230
SIZE D
NASA NUMBER 8106073
SCALE —
WEIGHT CALC ACTUAL
SHEET 1 OF

11/22/72
11/22/72

AD-1200

NOTE:
1. REFER TO MASTER RETROFIT KIT DWG 8106025 FOR PRE-AND POST MODIFICATION OF AFFECTED HARDWARE
2. ITEMS 10 AND 11 ARE REWORKED PANELS FROM PN 2011590 AND PN 2012671 RESPECTIVELY FOR OUA'S SN 015 AND SN 016.

REVISIONS TORR 35314				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL

NEW MATERIAL REQUIRED

	ITEM	QTY	PART NO	DESCRIPTION
	1	4	1012156-4	SERVO, MOTOR-TACH GEN
	2	2	2012759	SPRING, HELICAL COMP
	3	2	2012752	SPACER
	4	2	1011768-8	PACKING, PREFORMED
	5	2	1011768-14	PACKING, PREFORMED
	6	9	2011213	WASHER, WAVE
	7	3	1011625-97	SCREW, CAP, SOC HD, SELF LOCKING
	8	2	2012760	WEDGE RIGHT TRIANGLE
	9	1	1004260-300	PLATE, IDENTIFICATION
SEE NOTE 2	10	1	2012727	PANEL, SXT
SEE NOTE 2	11	1	2012765	PANEL, SCT

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8106025	8106025

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN Rindeuner DATE 10-23-67
CHECKED M. Fowell 10-23-67
APPROVAL
MIT APPROVAL E. Thomp 12/1/67
NASA APPROVAL
APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE RETROFIT KIT DWG FOR ECP OPTICAL UNIT ASSEMBLY (2011000)

CODE IDENT NO. 80230
SIZE C
NASA NUMBER 8106074
SCALE
WEIGHT CALC ACTUAL
SHEET 1 OF 1

8106074

AD 1340

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPROVAL
—		INITIAL RELEASE CLASS A PER TDRR 38217	9-10-70	JLS

NOTES:
1. REFER TO MASTER RETROFIT KIT DWG 8106025 FOR PRE AND POST MODIFICATION OF AFFECTED HARDWARE.

NEW MATERIAL REQUIRED

	ITEM	QTY	GOVT/NASA NO.	NOMENCLATURE	MAY BE MADE FROM
	1	3	2012829	ROD, LIGHT. TRANSMITTING	
	2	3	2011633	SLEEVE, SPLIT	
	3	3	MS51021-9	SET SCREW, HEX, SOC HD, CUP PT	
	4	2	1012571-1	BEARING, BALL, ANNULAR	1012506-1 (GFP)
	5	2	1012571-2	BEARING, BALL, ANNULAR	1012506-2
*	6	1	1012570	BEARING, BALL, ANNULAR	1012077
	7	2	1012568	BEARING, BALL, ANNULAR	1011611
	8	2	1012567	BEARING, BALL, ANNULAR	1011610
	9	1	1012566	BEARING, BALL, ANNULAR (DUPLEX)	1011609
	10	1	1012565-5	BEARING, BALL, ANNULAR	1011608-5
*	11	4	1012565-4	BEARING, BALL, ANNULAR	1011608-4
*	12	21	1012565-3	BEARING, BALL, ANNULAR	1011608-3
*	13	4	1012565-2	BEARING, BALL, ANNULAR	1011608-2
*	14	5	1012565-1	BEARING, BALL, ANNULAR	1011608-1 (GFP)
	15	2	1011768-8	PACKING, PREFORMED	
	16	2	1011768-14	PACKING, PREFORMED	
	17	AR	1008936-003	TAPE, LACING	
	18	4	1012156-5	SERVO MOTOR - TACHOMETER, GENERATOR (GFP)	
	19	AR	1012050	LUBRICATING OIL, SILICONE	
	20	AR	1012051	GREASE, SILICONE	
	21	AR	1011541	ADHESIVE, EPOXY	
	22	1	1004260-300	PLATE, IDENTIFICATION	
	23	AR	1012543-003	COATING KIT, LIGHT DIFFUSING	
	24	1	2012831	OPTICAL BASE (GFP)	
	25	1	1011599-10	PACKING, PREFORMED	
	26	1	1011599-9	PACKING, PREFORMED	

* THE FOLLOWING BEARINGS SHALL BE CLEANED AND RELUBRICATED AT THEIR RESPECTIVE ASSEMBLY LEVELS PER ND1002442 AND REIDENTIFIED TO THEIR ASSIGNED NEW PART NUMBER ON THIS DRAWING. HOWEVER, FOR BEARINGS THAT ARE FOUND TO BE DEFECTED, THEY SHALL BE REPLACED WITH NEW BEARINGS.

8106097

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8106025	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOL ON: FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-10356

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC PN
DRAWN F. PLESCHE DATE 6-30-70
CHECKED F. Plesche 7/1/70
APPROVAL W. Chin 7/1/70
APPROVAL 7/24/70
NASA APPROVAL 9-2-70
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
TITLE RETROFIT KIT FOR ECP 1013 OPTICAL UNIT ASSEMBLY
CODE IDENT NO. 99974 SIZE D NASA NUMBER 8106097
SCALE WEIGHT CALC ACTUAL SHEET 1 OF 1

AD-1390

8609018

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVAL
—	—	INITIAL RELEASE CLASS A PER TDRR 38564	12/21/71	M.H.

NOTES:

1. REFER TO MASTER RETROFIT KIT DRAWING 8106025 FOR PRE AND POST MODIFICATION OF AFFECTED HARDWARE.
2. REF: GFP PRISM HOUSING ASSY 2012775 SHALL BE REWORKED TO 2012775-011 WHICH INCLUDES ALL ITEMS LISTED BELOW.

ITEM	QTY	PART NO.	DESCRIPTION	THIS MAY BE MADE FROM
1	AR	1010304	CURING AGENT, AMINE	
2	AR	1012533	EPOXY RESIN	
3	AR	1012515	COMPOUND, SILICONE RUBBER	
4	AR	1012514	CATALYST	
5	AR	1012513	PRIMER, SILICONE	
6	AR	1010702	ETCHING SOLUTION, TEFLON	
7	1	2012842	HOUSING, SCT PRISM	2012665 GFP
8	1	1010623-2	TERMINAL, TURRET	
9	1	1012548	SWITCH, THERMOSTATIC (GFP)	
10	1	2012843	CLAMP, SWITCH	
11	7	MS16995-1	SCREW, CAP, SOC HD	
12	1	1012516-002	TERMINAL, STUD	
13	2	1010858-2	PACKING, PREFORMED-"O" RING	
14	1	2012792-4	POTTED CABLE & CONN. ASSY	2012792-1GFP
15	1	2012844	CLAMP, CABLE	
16	1	2012845	HEATER HOUSING ASSY	
17	3	AN565BC4H2	SETSCREW, HEX SOC, HEADLESS	
18	1	2012847	COVER, THERMOSTAT	
19	1	2012789	PLUG, POTTING CAP	
20	AR	MIL-S-22473 GRADE "H"	COMPOUND, SEALING	

8106098

ITEM NO.	QTY REQD	SYM	GOVERNMENT/NASA NO.	KOLLSMAN PART NO.	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	UNIT WT

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
8106025	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

TOL ON	FRACTIONS	DECIMALS	ANGLES
	± —	± —	± —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

KOLLSMAN INSTRUMENT CORPORATION
ELMHURST NEW YORK
KIC
PN

DRAWN R. DeCarlo DATE 12-13-71
CHECKED AJ PERALTA 12-15-71
APPROVAL 12/15/71
APPROVAL L. Tuchschun 12/21
NASA APPROVAL 12-21-71
DE APPROVAL 12/21/71

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TITLE
RETROFIT KIT DWG FOR
PRISM HOUSING ASSY
(SCT)(2012775)ECP 1038

CODE IDENT NO.	SIZE	NASA NUMBER
89944	C	8106098

SCALE | WEIGHT | CALC ACTUAL | SHEET 1 OF 1

AD-1340